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EDITORIAL.

The Analysis of Quinine Pills.

THE recent publication by the *Medical News* of an analysis of the quinine pills of the market, without the signature of the chemist responsible for the analysis, and the evident defects and errors inherent in the published figures, elicited such a protest from the manufacturers, that our esteemed cotemporary, the Chicago *Pharmacist*, undertook to have a fresh analysis made, by a chemist of repute, whose name should be published with the results, in order to give a *final* and *reliable* report. The manufacturers were asked whether they consented to this, and favorable replies were received from all but one; but some of the replies attached certain conditions, as, for instance, that the analysis should be made in presence of the chemist representing the house. These conditions appear to have been ignored, but the editor of the *Pharmacist* offers to have the analysis repeated, on the remaining half of the samples, in presence of a representative from each house.

The chemist selected by the editor of the *Pharmacist* was Prof. C. Lewis Diehl, of Louisville, and the report of the latter is published in the April number of the *Pharmacist*. The editor prefaces the report by an introduction in which he states that Prof. Diehl urgently requested that the *names* of the firms be withheld from publication, on account of the *endless* controversy *any analysis*, however true and perfect it is, will cause. The editor remarks that he would have done so, were it consistent with his promise, but he could not do so. We regret exceedingly that he should have disregarded Prof. Diehl's request, because, in our humble opinion, the published analysis does not settle the question at all. We have every confidence in the ability and conscientiousness of Prof. Diehl, but we have some personal experience with quinine-assay, and have very strong doubts whether all the steps of the process, as detailed in Prof. Diehl's report, will be proof against criticism. We doubt very much whether the six most competent quinine-analysts of the world would have obtained identical results in following the process; and, what is more, we doubt whether they would have obtained identical results in following, each, the process he considers the most accurate. For it is one thing to determine the amount of *total* alkaloids in bark or in a mixture, or the amount of *ether*-soluble alkaloid, or even the amount of *quinine* the manufacturer will be able to obtain from a bark; but it is an altogether different thing to *separate* quinine from a mixture, and to be able to say: "1st, this is quinine and nothing else; 2d, the other portion is not quinine, and does not contain any; 3d, the proportion of the quinine I find by analysis in the total alkaloids is the same as was present in the original quinine employed by the manufacturer." Unless these three fundamental questions are fully and positively answered by the analysis, we hold it to be of no value.

It is our conviction that the action of the *Pharmacist* and the report of Prof. Diehl will form the starting-point for a fresh and exhaustive study of this most difficult part of organic quantitative analysis, and will result in furnishing us methods of separation and assay that may be thoroughly reliable.

Pharmacists as Public Analysts.

IT is well known that many of the more common articles of food are liable to adulteration or sophistication. Most purchasers and consumers are incapable of discovering or demonstrating the fraud and, therefore, depend largely upon the representations made by the seller and his supposed reputation for honesty. Yet this is, in most cases, no positive guarantee for the quality of the articles he sells, since he may, himself, be compelled to purchase his goods from others, without being sufficiently competent to apply any critical tests. The buyer is, therefore, in the large majority of instances, at the mercy of those who can manipulate the articles in any desired manner before they reach him. It is out of the question to refer in each case to the appointed public analyst, for, instead of having one or even a dozen of the latter, we would need one or more for every large city-block, immediately accessible and able and ready to solve questions of doubt at short notice. It is not the function of the State Analysts to place themselves directly at the service of the people, although this is, in the end, the object to be gained. The work and investigations of the State Analysts are primarily intended for the information of the Sanitary Authorities, to enable them to administer the existing sanitary laws intelligently and to devise new plans for protecting public health and life. Frequently the State Analyst has the opportunity of rendering an immediate, *direct* benefit to the people, but the State cannot afford to appoint and to pay a sufficient number of such officers to be at all times at the command of the public. In questions involving the investment of capital in commercial, manufacturing or mining enterprises, the services of the private analytical chemist are called in and are rewarded in proportion to the value of the services or the magnitude of the interest involved. Yet there are hundreds of cases occurring in every-day life where the application of a moderate degree of analytical skill would be of the greatest possible benefit to individuals about to make purchases in the open market. The value involved, in these cases, is too small to justify the employment of a professional analytical chemist, and yet it may be large enough to make an awkward vacancy in the pocket of the purchaser if it turns out to be an unlucky investment.

(Continued on page 160.)

[ORIGINAL COMMUNICATION.]

Zapoto, or Balata Gum.

BY A. M. BOYD, M.D.

IN the January number of your journal for 1882, page 16, I find an article on the Bully Tree Gum, or *Sapota Muelleri*, Balata, Tuno, Leche de Popa, or Gum Chicle.

The writer (the United States Consul at Belize, British Honduras) says that the Ballata, or Tuno, as it is called in this country, is prepared from the milk of a tree which closely resembles that which produces the India-rubber, and it seems to be an intermediary between caoutchouc and gutta percha.

I have been engaged in buying and exporting Chicle, or Zapoto gum, as we term it here, to the United States for more than ten years. The description given by the abovementioned writer does not in any way agree with the article we ship from this port under the name of chicle.

In the first place, there is no more resemblance between the Zapoto and the tree producing India-rubber than there is between the pine tree and the poplar of the United States.

The tree from which the chicle is obtained is called here the Zapoto chica, Zapotillo, and the native or Indian name is Xiconzopotl. It bears a fruit about the size of a small peach, of a dark color, with a rough skin, like the bark of a tree; has a large, smooth, black seed, and is a delicious fruit to eat. The leaves are long and narrow, much resembling the peach leaf, while that of the India-rubber is broad and long, as the samples which I send will demonstrate. The wood of the Zapoto is extremely hard and durable, and susceptible of a very fine polish, and is used largely for building purposes. That of the India-rubber tree is soft and spongy, and very perishable.

The Zapoto often attains the height of from sixty to eighty feet and a diameter of over two feet. It abounds in the lowlands of the Gulf coast in the *terra caliente*, or hot regions.

The mode of obtaining the milk from the tree is to belt the tree from the ground upward in a diagonal direction around the tree, down which the milk flows into vessels set to receive it. The mode of preparing it for the market consists in boiling the milk in kettles until it coagulates, when it is formed into blocks weighing from one to twenty-five pounds, in which form it comes into market.

Owing to the careless manner with which the natives treat the trees, the supply is becoming exhausted. I am informed that once a tree is dead it will require from four to six years to produce another crop.

Large amounts are annually shipped from this port to the United States, mostly to New York and New Orleans. The season for collecting it begins about the first of November and continues until the last of March. This season, now closing, has produced, to date, over 200,000 pounds, all of which has been shipped to the above ports. The use to which it is applied appears to be the manufacture of chewing gum. When bleached it is very white, and resembles paraffin, with which it is often mixed. So far as I am informed, it has not become an article of general commerce, but is largely consumed in some way.

The India-rubber tree abounds in considerable quantities in this vicinity, and large quantities are annually exported to New York. The same causes which are diminishing the supply of chicle apply to the India-rubber tree. Some farmers are experimenting with the rubber tree by planting it around their farms, and it bids fair to prove a success, and at no distant day to materially increase the rubber supply. One farmer has procured some cinchona seed, and intends experimenting with that tree in the valley, and I see no reason why it should not succeed here, as it grows spontaneously on the Pacific coast. There are many resins, gums, and plants in this country which, if properly developed, would prove valuable accessions to our materia medica.

TUXPAN, MEXICO, March 5th, 1883.

[ORIGINAL COMMUNICATION.]

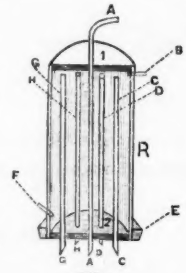
A Home-Made Extraction Apparatus.

BY CHARLES O. CURRIER.

THE following-described apparatus for the extraction of drugs by means of volatile liquids possesses advantages over other apparatus on account of its simplicity, cheapness, and larger condensing surface. It can be made by any pharmacist, with the aid of a tin-smith, at an expense of about one dollar.

It consists of a glass-flask, O; glass-percolator, K; and a condenser, R.

The condenser is the only part that will have to be made, the other parts of the apparatus are to be found in almost every laboratory.



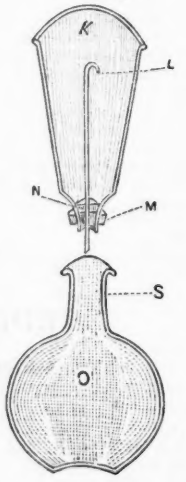
The condenser is a modification of the Liebig condenser, consisting of a number of tubes instead of one, thereby increasing the condensing surface and distributing the condensed liquid evenly over the surface of the drug.

The condenser is made in the following manner:

A tube of tinned copper is made one inch less in diameter than the top of the percolator to be used, and about two or three times as long as its diameter.

A cap of tinned copper (tinned side out) is fitted to each end of the tube.

The tube is traversed by tin tubes (made by cutting off block-tin pipe to the proper length) that project three-fourths of an inch below the lower cap, and are cut off obliquely to facilitate the dropping of the condensed liquid.



One of the tubes A is in the centre and passes through the upper cap about six inches, to which a bent safety tube may be attached to prevent undue pressure to the apparatus.

The other tubes, G, H, C, D, are closed at the top and pass into the condensing tube to within one-half inch of the top and are arranged in a circle around the central one. Their number can be increased or diminished according to the size of the apparatus, four or five being sufficient for a pint percolator. Holes for these tubes should be made through the lower cap just the size of the tubes and the tubes soldered to the cap 2 on the inside before the cap is soldered to the condensing tube.

A small brass tube F is inserted in the condenser near the bottom and one near the top, B, for the entrance of cold water and exit of warm water.

A cork is chosen that will fit tightly into the top of the percolator and a circular piece cut out of it, just the size of the condenser R, and is put upon the lower part of it at E. The cork can be kept in place and prevented from slipping up the tube when pressing into the percolator by soldering a collar of tin to the condenser at a distance from the bottom equal to the thickness of the cork.

The apparatus is used in the following manner: A cork, N, with longitudinal channels cut in its surface, is inserted in the neck of the percolator, K; through the center of the cork a glass-tube, L, is passed to within two inches

of the top of the percolator. The tube should be bent over at the top to prevent its being clogged up by the drug while packing it into the percolator. A little cotton is placed in the percolator and pressed down upon the cork and the drug packed in the usual manner.

The percolator is then fitted into the neck of the flask O, by means of a perforated cork M, the liquid to be used as a menstruum having been previously put in the flask.

The condenser is then connected firmly with the top of the percolator. The joints are luted with ground flax-seed mixed into a stiff paste with water. The tube F is connected with a supply of cold water by means of a rubber pipe, and the tube B with a sink or waste pipe.

The apparatus thus put together is placed in a water-bath and heat applied. The flask should be immersed in the water to the point marked S on the neck.

After the drug is exhausted the percolator is removed from the flask and the flask is connected by means of a bent tube with a Liebig's condenser and the liquid recovered.

STONEHAM, MASS.

[ORIGINAL COMMUNICATION.]

Historical Notes on Arsenic and its Principal Combinations.

BY PROF. JAMES F. BABCOCK, OF BOSTON.

(Continued from page 93.)

THE earliest writer who makes mention of white arsenic (arsenious oxide) as a distinct substance was Geber (8th Cent.).

He says: "Arsenic (orpiment) which before its sublimation was evil and prone to adustion, after its sublimation, suffers not itself to be inflamed, but only recedes without inflammation; and you may find the same in sulphur if you make trial."*

He gives several processes for the sublimation of white arsenic, and the direction to "gather what ascends, white, dense, clear and lucid."†

In his work *On Furnaces*, he distinctly refers to white arsenic, which in several cases he calls also sublimed arsenic.‡

In other places, he speaks of metallic arsenic (*arsenicum metallinum*), and he gives the following directions:

"Take of realgar one ounce; of *argent vive* sublimed, three ounces; of tartar, calcined, one ounce; grind and incorporate, and put them in a phial with a neck a foot in length, and its orifice so wide as two fingers may enter; let it be luted, and set it over a fire, covered with a cloth. First make a gentle fire for a quarter of an hour; afterward augment the fire underneath and round about until the furnace be very hot with ignition. When all is cold, break the vessel, and take out what you find metalline.§

Arabian physicians who succeeded Geber, and particularly Avicenna (10th Cent.) and Ibn Bait'âr (13th Cent.), describe all three kinds of arsenic, the white, the yellow, and the red, and state that the former (*arsenicum album*) is a deadly poison. Ibn Bait'âr states that the yellow and red varieties on calcination become white.‖

Albertus Magnus (1193–1280) clearly describes the preparation of metallic arsenic. He says:

"A metal is produced by melting one part of orpiment with two parts of soap."¶

He was also aware that copper whitened by arsenic was not transformed into silver, but an alloy which, being heated, gave up its arsenic, the copper returning to its original color.

"*Aes exspirabit arsenicum, et tunc redit pristinus color cupri.*"*

Roger Bacon (1214–1292) described the preparation of arsenious oxide, as follows:

"White arsenic is obtained by subliming orpiment with iron filings. It is white and transparent, like glass" (*ut cristallum lucidum*).† Bacon says nothing of its poisonous properties.

Basil Valentine (15th Cent.) wrote as follows: "Its whole substance is poisonous and volatile; . . . in its external color it is white, yellow, and red, but inwardly it is adorned with all manner of colors like its metals which it was fain to forsake, being forced thereunto by fire. It is sublimed *per se* without addition, and also in its subliming place there are added several other matters as occasion requireth. If it be sublimed with salt and mars (iron), then it looks like a transparent crystal, but its poison‡ stayeth still with it, unfit to be joined or added to metals."§

About the end of the fifteenth century, great quantities of cobalt ores containing arsenic were dug from the mines on the borders of Saxony and Bohemia. The roasting of these ores proved dangerous to the workmen employed for that purpose, on account of the large quantities of arsenical fumes which were produced.

Basil Valentine was the first to write of this danger to those who were thus exposed; he calls the arsenical fumes *Hüttenrauch*, or "furnace smoke."‖

During the fifteenth century, white arsenic began to be kept in German drug-stores.

Paracelsus (1493–1541) appears to have been acquainted with metallic arsenic, for he states that "arsenic sublimed with the lime of egg-shells becomes like silver."¶

Paracelsus in several places asserts that arsenic surpasses all other poisons in its energy.

"The life of arsenic, auripigment (orpiment), realgar, and such-like bodies is a mineral and corrosive poison."**

Libavius (1560–1616) recommends a mixture of white arsenic with milk and flour to be made into little cakes as a poison for rats. *Adhibetur ad necandos mures, sive quis pastillos cum lacte et farina facere velit.*††

Kunckel (1638–1703) in his description of furnaces used for the preparation of smalt, shows how white arsenic was obtained from the fumes of the roasted cobalt ore.‡‡

Boerhaave (1668–1738) in his *Elementa Chemiæ*, 1732, wrote as follows:

"The poisonous arsenic is a white crystalline ponderous pulverable body, and but of late invention, being unknown two hundred years ago."

He remarks also that "there is no good antidote against this poison."§§

Schroeder was the first who prepared (in 1694) metallic arsenic by reducing white arsenic with charcoal.

Brandt (1694–1768) is by many writers named as the discoverer of metallic arsenic, but, though this honor must be denied him, he is entitled to the credit of having first recognized it as an element and given a detailed and exact description of it and its relations to the other elements. In a memoir published in the Proceedings of the Philosophical Society

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CORRECTION.—In Note ‖ of the first part of this paper, on page 93, read (in three places) *fâr*, instead of *fa'r*.

* Summa perfectionis magisterii, Lib. ii., cap. i. in Mangeti Bibliotheca Chimica Curiosa, vol. i., p. 530. Translated in The Works of Geber by Richard Russel. London, 1678, page 87.

† Invention of Verity, ch. vii., in Russel's Geber, p. 252.

‡ Russel's Geber, p. 297.

§ On Furnaces, ch. xxv. in Russel's Geber, p. 296.

‖ Paulus Ægineta, Syd. Soc. Translation, by Francis Adams. London, 1347. Vol. ii., 235; vol. iii., 53.

Ibn Bait'âr, translated by Leclerc in *Notices et Extraits des Manuscrits de la Bibliothèque Nationale*. 4to. Paris, vol. xxv. (1881), pp. 205, 341.

¶ *Compositum de compositis* in *Theatrum Chemicum*, iv., 92).

* De rebus metallicis et mineralibus.

† *Brevé, breviarium de dono Dei* in *Thesaurus chemicus*, Francof., 1620. p. 25.

‡ Poison is here to be understood, as a substance capable of killing metals, *i. e.*, combining with them and altering their properties. Pietro Bono Lombardo writes in his *Margarita pretiosa* (1330): "It is only mineral poisons, such as sulphur and arsenic, which kill mercury, because they are of like nature with it." (Lombardo in *Theatrum Chemicum*, v.)

§ Last Will and Testament. London, 1670, p. 302. In Chemische Schriften, p. 102. Hamburg (ed. Lange), 1700.

‖ *Letztes Testament* in *Chemysch. Schriften*. Hamburg (edition Petraeus), 1717, p. 494.

¶ Bergman's Essays, London, 1788, vol. ii., p. 275.

** *The Nature of Things*. London, 1650, p. 32.

†† *Syntagma selectorum*. Lib. vii., ch. 26. Francof., 1615.

‡‡ *Ars vitraria experimentalis*. Francof., 1679.

§§ Shaw's Boerhaave. London, 1741, p. 115.

of Upsala in 1733, he maintained that white arsenic was a calx (oxide) of a metal, and he showed how its regulus (metal) might be prepared by exposing white arsenic mixed with oil to a dull-red heat in a crucible.*

The conclusions of Brandt were confirmed by Monnet, whose essay† received the prize of the Berlin Academy.‡

Reinsch's test for arsenic by the use of copper was announced in 1828 and Marsh's test in 1836. (See *arsenic hydride*.)

Orfila in 1838–39 claimed that arsenic was a normal ingredient in the tissues of the body,§ but in 1840 he discovered this statement to be an error, which was still further proved by the researches of Danger and Flandin.

Arsenic was first fused by Landoldt in 1859 by heating it to low-redness, under pressure in a glass tube inclosed in one of iron.¶

ARSENIC BROMIDE.—This combination was first obtained and studied by Serrullas in 1828.**

ARSENIC CHLORIDE.—This body, known as *butter of arsenic*, was first obtained by Glauber (1603–1668) by distilling a mixture of *auripigmentum*, salt, and vitriol.††

ARSENIC FLUORIDE.—Arsenic fluoride was prepared by Unverdorben in 1826.‡‡

ARSENIC HYDRIDE.—This gas, commonly called arsenetted hydrogen, was discovered by Scheele in 1775, by dissolving tin in arsenic acid.§§

It was first further studied by Proust in 1799, who prepared the gas by the action of dilute sulphuric acid upon zinc in presence of arsenious oxide.‖‖

A complete account of it was given by Trommsdorff in 1803. The same observer was the first to mention its poisonous properties.

He says that his health had "been considerably injured by the unavoidable inhalation of this gas, which gives me ample reason to conclude that the gas must be highly poisonous."¶¶

It was still further studied by Stromeyer in 1806.***

Gehlen lost his life by the accidental inhalation of this gas in 1815.†††

The precise composition of arsenic hydride was given by Dumas, in 1826.‡‡‡

Marsh's test for arsenic founded upon the production of this gas was described by James Marsh, of the Royal Arsenal at Woolwich, in 1836. For this contribution to science he was awarded the gold medal of the Society of Arts of London.§§§

The test for arsenic founded on the passage of this gas through silver nitrate was proposed by Lassaigne, in 1840. The reaction had, however, been described by Trommsdorff, in 1803.‖‖‖

A very full report upon Marsh's test was made to the French Academy, in 1841, by Thenard, Dumas, Boussingault, and Regnault.¶¶¶

(To be concluded in next No.)

Pencils of Zinc Sulphate.

THESE may be prepared by melting crystals of sulphate of zinc in a porcelain dish in their water of crystallization, and then quickly pouring the liquid thus obtained into cones of waxed paper.

* *Acta Upsal.*, iii., p. 39.
† *Diss. sur l'arsenic*, Berlin, 1774.
‡ Schweigger's Journal, vol. liii., 377.
§ Mem. de l'Acad. de Med., viii., 464.
‖ Comptes Rendus, 1840, ii., p. 1038.
¶ Will's Jahresbericht, 1859, p. 182.
** Ann. Chim. et Phys., xxxviii., 318.
†† Furni novi philosophici, Amst., 1648.
‡‡ Pogg. Ann., vii., 316.
§§ Scheele's Chemical Essays. London, 1786. Vetensk. Acad. Handl., 1775.
‖‖ Journal de Physique, 1799.
¶¶ Nicholson's Journal, vol. vi.
*** Nicholson's Journal, xix., 381. Comment. Soc. Gott., xvi.
††† Ann. Ch. Phys., xcv., 110. Schweigger's Journal, xv., 501.
‡‡‡ Ann. de Chim., xxxiii., 358.
§§§ Trans. Soc. Arts. London, vol. li. New. Edinb. Phil. Jour., xxi., 229.
‖‖‖ Comptes Rendus, vol. xi.
¶¶¶ Comptes Rendus, vol. xii., 1076. Annal. de Chim. et Phys. [3], ii., 159.

The Active Principles of Podophyllin.

PARTLY in reply to a query, we will repeat here, that, according to DR. V. PODVYSOTZKY, of Dorpat, the root of *Podophyllum peltatum* and the alcoholic extract from it contain a resinous, amorphous, bitter, and very active substance which he calls podophyllotoxin. The latter is capable of subdivision into two distinct chemical compounds which he named "picropodophyllin" and "picropodophyllinic acid." The former of these he considers as the active principle of the drug, but its cost is too great to admit of its use. He recommends for therapeutic purposes a solution of 2 grains of podophyllotoxin in 200 grains of alcohol, of which the dose for an adult would be 30 drops, in a small glass of wine. Excess of water precipitates it and so do alkalies, which should be avoided during its use.

[It is a matter of observation that salt or salted food increases the activity of podophyllin, and lactic acid diminishes it. In practice, therefore, sour milk, or buttermilk is resorted to as a means for relieving the effects produced by an excessive dose.—ED. N. REM.]

Lozenge Cutter.

EMIL OBERDOERFER, of Hamburg, makes a lozenge cutter, the construction of which will be readily understood by inspecting the accompaning cut. The apparatus cuts 24 lozenges at a time, so that, after some practice, a workman may turn out 1000 per hour. The stamps are either blank, or marked with a star, or may have any name or device upon it ordered by the purchaser. The price, with 24 smooth stamps, is only 23 marks.

Normal Solutions for the Volumetric Estimation of Iron.

BY B. BRITTON.

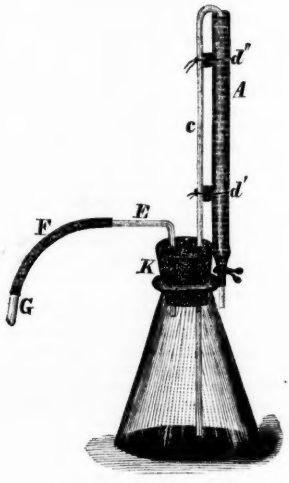
THE author has examined a number of specimens of iron, such as are generally used for standardizing, and found them much more impure than is generally supposed. The average percentage of iron found in a number of pianoforte wires was 98.76. The purest sample of bar iron from Norway and Sweden contained, however, 99.6 per cent iron. Iron salts were found to be still less trustworthy than metallic iron.—*Chem. Centralbl.*, 1882, 733.

Remarks on a Troublesome Ointment.

BY S. A. MCDONNELL.

℞ Extracti eucalypti,
" hydrastis,
" iridis versicol.....āā ʒ i.
Unguenti petrolei..... ʒ i.
Misce sec. art.

In mixing this, according to the usual routine, namely, placing the extracts with a little water in a suitable vessel, and heating together, etc., it is noticed that a large portion of the extracts separates into apparently leathery clots that no amount of assiduity would make into a uniform mixture. The mode of preparation was varied by using twenty-five per cent alcohol and 50 per cent alcohol—due regard being had to the dissipating influence of the heat applied; but the result was the same—a mixture unfit to be sent out by an accomplished pharmacist. A portion of glycerin was added to the extracts of the last experiment, and heat applied, until all the alcohol and water were evaporated off, leaving the extracts in the glycerin, smooth, soft, and nice, which, on being added to the vaseline, made a perfect ointment.—*Proc. Cal. Pharm. Soc. and Coll. Pharm.*, 1833, 44.



Volumetric Apparatus.

A SIMPLE apparatus for titration, particularly suitable for acidimetric and alkalimetric assays, is that which has been used since 1880 in the laboratory of the technical school at Braunschweig, and which is here illustrated. *B* is an Erlenmeyer flask, which serves as receptacle of the volumetric solution. *K* is a twice perforated rubber stopper, carrying in one of its perforations a glass tube reaching to the bottom of the flask, *B*. The upper end of the tube, *C*, is curved, and projects into the burette, *A*. In order to make the arrangement sufficiently secure, the burette is fastened to the tube *C*, by means of the two corks, *d* and *d'*, and a cord. Through the second perforation of the stopper, *K*, passes a glass-tube, *E*, bent at right angles, over which a piece of rubber-tubing carrying a small glass mouth-piece, is slipped. When the burette is to be filled, air is blown into the rubber-tube, whereby the volumetric solution is made to rise in the glass-tube, *C*, and flows into the burette.

The advantages of this arrangement are self-evident, for, in the first place, it can be easily carried without having to be taken apart, and secondly, the burette can be filled with the greatest ease. The objection that the blowing in of air may cause carbonic acid to be absorbed by volumetric solution of alkalies, may be overcome by interposing between the mouth-piece and the flask itself, a so-called potash-tube. Experiments made to test the permanency of the titer, have shown that it is not altered by as much as 0.1 *cc.*, even when standing four weeks.—*Drogisten Zeitung.*

On some New Remedies.*

Lycoperdon giganteum (*The Giant Puff-ball*).—*Lycoperdon giganteum* is a fungus belonging to the Nat. Ord. Trichogastres. The peridium or outer coat which breaks up into warts or scales, is intimately connected with the inner coat, and the spores are mostly sessile. All the various species of *Lycoperdon* are produced abundantly in nearly every country, but are so variable both in character and properties that it is very difficult to distinguish them.

Dr. E. Thompson recalls attention in the *Lancet* to the use of this fungus as a local hæmostatic. He states that it forms a very soft and comfortable surgical dressing, and that the powder it contains seems to possess antiseptic and anodyne properties. The mature plant is used. At this period it is about the size of a child's head, and is covered with a thin skin; the latter is removed and the capillitium and spores, which form a dusty mass, are used. Mr. Fagan, a leading surgeon in Belfast, found that it at once restrained bleeding from arteries in the bone, in the neighborhood of the orbit, after the failure of other means. The researches of Hagen, on the reason of the coagulation of the blood, show that the hæmostatic action of the puff-ball, as well as of all other spongy or powdery substances, depends upon the fact that healthy blood deposits hæmatoblasts or minute corpuscles on any foreign substance introduced into a vein, which become adhesive points for the subsequent attachment of particles of fibrin. This action, however, also takes place when the vessels themselves assume abnormal conditions, as when cut or altered by disease.

Pongamia glabra, Nat. Ord. *Leguminosæ*.—*Pongamia glabra* is a tree extensively diffused throughout Southern India, Malacca, and the Indian Archipelago, and also found in Southern China and North Australia. It has smooth pinnate leaves, composed of five or seven egg-shaped or broadly elliptical leaflets, arranged in pairs with a terminal odd one; and loose axillary racemes of flowers. In India an oil, called pongamia or kurung oil, is expressed from the seeds, which is described in most works on Hindu Materia Medica as being a favorite remedy amongst the natives for various skin diseases. The oil is of a deep yellow color, inclining to reddish-brown, and is fluid at temperatures above 60° Fahr., but below that it becomes solid.

Surgeon-Major Dymock, of Bombay, has recently called attention to the use of pongamia oil in pityriasis versicolor. Having observed that the specific character of the diseases in which the oil had been used was not clearly defined in the descriptions given by Ainslie and other writers, he determined to make some experiments with the oil, and selected pityriasis versicolor, as a common and troublesome affection, for the first experiment.

Several cases occurring on the neck, face, and shoulders were cured in less than a fortnight by rubbing in the oil twice a day. He concludes, therefore, that this oil is likely to be of service in other skin diseases which, like pityriasis, are attended by the growth of a fungus. Dr. Dymock considers this oil much more effective than acetic acid; while it has the advantage over iodine and Goa powder of not discoloring the part (often the face) to which it is applied. Dr. Thin has recently stated that sulphur ointment is an admirable remedy for ringworm; but pongamia oil might be used in cases where the disease is of a recurrent character.

* From a report on Materia Medica by WILLIAM ELBORNE, read before the School of Pharmacy Students Association. From *Pharm. Journ.*, Feb. 24th, 1883.

Extracts and Tinctures.

BY WILLIAM GILMOUR.

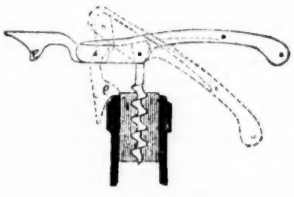
THE influences with affect the permanence of ordinary tinctures are necessarily very similar to those which affect fluid extracts by the mixing of solutions varying in density and composition in the progress of percolation; and secondly, changes in temperature. There is, however, this important difference between the two classes of preparations, namely, that while the one is in every case a concentrated, if not a saturated, preparation, the other, in the majority of instances, is neither, and therefore precipitation will not take place to the same extent in it. While this is the case, however, there are changes produced in tinctures not less marked, and probably in many cases more troublesome than the deposit in fluid extracts, and we would now for a moment consider some of the predisposing causes to such changes and decompositions. Before doing this we might refer in a sentence to what may be considered a popular fallacy in regard to our opinion of tinctures and alcoholic preparations. We are apt, from the very association of circumstances, to conclude that because a tincture or other preparation is made with alcohol it will of necessity be permanent, or at least free from decomposition. Spirit is added to our extracts and infusions and other preparations to preserve them, and from the very association of ideas we unthinkingly conclude that all preparations made or preserved with spirit will be permanent, that is to say, if sufficient spirit has in the first instance been added, and in the second if the spirit so added has been properly protected from evaporation. That this is not the case a moments's reflection will show, and many instances might be given in which not only the active principle held in solution, but the alcohol itself, has undergone decomposition. As an example of the former we might give several instances, as in the case of tincture of kino, where the soluble matter passes sometimes into a semi-solid magma, which can only be accounted for on the supposition of some chemical change and not from evaporation of spirit. Of the latter, two very peculiar instances have recently come under our observation, namely, one in which the alcohol of a strong tincture of ginger had passed into the acetous stage of fermentation, and another of compound tincture of cinnamon, in which, apparently, a process of decomposition had set in tending towards the acetous. In the case of the ginger the color had been quite discharged, there was no appreciable amount of precipitation, and the acetic flavor and reaction was very decided; but in the case of the cinnamon the change might have escaped observation but for a peculiar want of brightness in the tincture. There was little or no deposit, neither was the tincture quite opaque, but it had a muddy appearance both by reflected and transmitted light, and neither the addition of more spirit nor the application of heat affected it in the least. It was, in short, hopelessly bad. We give these two cases simply because they have come recently under our observation, but any one who has paid the least attention to the subject might readily multiply instances in proof of the fact. But, while this is the case, it will at once be granted that in the majority of cases were a tendency towards precipitation or other change in a tincture has taken place, the probability will be—first, that there has been a loss of spirit from evaporation; second, exposure to variations of temperature; third, exposure to light; or, fourth, initial differences in the mode or time of preparation. In dealing with these several points, if our observations are to have any practical value at all, they must apply not to any artificial conditions either in the preparing or keeping of tinctures, etc., but to everyday circumstances as they are to be found in the great majority of our pharmaceutical establishments. Now, as regards evaporation, how does the case stand? Evaporation may take place either from (*a*) circumstances attending the extreme length of time which the tincture has been kept; (*b*) keeping the tincture in large bottles only one-fourth, or from that to one-half, full; or (*c*) imperfect stoppering, and we feel assured that it would not be difficult to find not one but all three conditions obtaining in most of our establishments. Many tinctures are used but seldom, still they may be well known officinal preparations, and it is necessary not only to have them in stock, but it is convenient to have them also prominently displayed on the shelves of our pharmacy in the orthodox 32 or 40 oz. bottle. Probably, in many cases, these preparations may have been once much used, justifying both the large bottle in which they are kept and their prominent position on the shelf, but fashion, even in medicine, changes, and it has been changing very much of late, and now it may be the preparations are but little used, and the bottles are still allowed to stand, though miserably attenuated in their contents. Such tinctures are certain to deteriorate in process of time, even where carefully kept. The process of deterioration will, however, set in more rapidly still if, as is too often the case, these tinctures are kept in bottles only partially full, or if, as they are almost certain to be, seeing they are so little used, they are relegated to the higher and more inaccessible shelves of the establishment. There they are exposed to all the extremes of temperature, and, however perfect the stoppers are (and they are much more perfect now than they used to be), the volatilization of the alcohol will almost certainly make them "lift" from time to time, with a certain loss of spirit. Apart from this, we have determined by repeated experiment that no tincture will stand for any length of time extremes of heat and cold, even where evaporation of spirit does not take place to any extent, without deterioration of quality. Probably no one who has not paid attention to this subject will be prepared to find that the extremes of temperature are so great as they frequently are —say, of a winter's evening, when the heat from the gas combines with other influences to raise the temperature, particularly of the higher regions, to an abnormal degree. We have found that a difference of 20° Fahr., in some instances increasing to 30°, is not an uncommon thing between the morning and evening register, and we can well understand how even the last temperature might be exceeded with less attention to ventilation, or with a lower ceiling, or with more lights. With this alternate play of heat and cold no tincture or extract will retain either its chemical or physical properties for any length of time, and we have in this probably one of the most fertile sources of precipitation and change in these preparations. Only second in importance to temperature and evaporation of spirit in causing precipitation and change in tinctures is exposure to light. We have already referred to this, so that we need not do more than mention it at present. Light undoubtedly has a very important effect in producing chemical changes in many tinctures, such as the iron tinctures, in which important decompositions take place not only in the iron but in the alcohol itself, and also in tinctures of chlorophyll-yielding plants, such as belladonna, digitalis, and hyoscyamus. Summer's sunshine is not much inferior to winter's heats and colds in producing changes, especially as it is always more or less accompanied with increase of temperature and all its evils. It has often struck us how easily the effects both of extremes in temperature and light might be minimized and the accompanying evils mitigated in most of our establishments were the following two points attended do, namely, not to place a tincture or other delicate preparation on a shelf near a window, where it would be exposed to all the influences, if not of direct sunshine, at least of light; and, second, not to place them on the higher shelves, where the heat is generally in proportion to the height. These may seem small points, but we think that they are points, as a rule, very much neglected, and, moreover, nothing is small where the efficiency of a remedy or the reputation of a pharmacist is concerned. We can testify to the frequency of complaints regarding the difference in taste, smell, and appearance of medicines as dispensed at different establishments, and probably no single series of circumstances are more prolific of such differences in the preparations referred to than those we have just pointed out. The last points we intend to touch upon are initial differences produced not only as between skilful and unskilful manipulation in the preparation, but

also as between a higher and a lower temperature, such as in summer and winter. Professor Lloyd very forcibly brought out the influence of temperature on the process of percolation, as conducted in summer and winter, when he pointed out that only from about one-fourth to one-half the extractive matter is recovered from the substance operated upon in the lower temperature. We were forcibly reminded of his experiments in macerating and percolating some preparations during a late severe and protracted storm. The temperature was unusually low, falling frequently during the night, even in the laboratory, several degrees below zero. The result was that none of the preparations then finished were satisfactory. Among the preparations were strong tincture of ginger, compound tincture of cinchona, ipecacuanha wine, and several others, and all were deficient either in body or brightness to a very marked extent. There is probably too little account taken of temperature in ordinary pharmaceutical operations, such as maceration and percolation. The Pharmacopœia properly directs specific operations to be conducted at 70° Fahr., but there are no special instructions or even general directions as to ordinary operations. Probably there could not well be, seeing the extremes are in general so universal and so much beyond our ability to deal with, but just because of this very fact we are apt to forget their influence altogether. Plainly a difference in temperature of 30° or 40° must be a very powerful factor in the preparation of the majority of tinctures, and, as this is not more than the difference frequently obtaining between a summer's heat and winter's cold, we cannot but assign it a place among the predisposing causes, if not of decomposition, at least of change in many tinctures. No tincture prepared under the two extremes of temperature will be alike in composition, however careful the manipulation, and few tinctures prepared under the higher will stand a reduction to the lower temperature without a change both in constitution and appearance.

We have more than once referred to the necessity for care and skill in all the operations connected with the percolation of tinctures and extracts. A careless or unskilful operator need scarcely expect to produce a satisfactory or uniform preparation. An average operator occasionally may, but it is only those who have studied both the process and the individual substance to be percolated, and studied both with care and scientific skill, that can hope to attain success in their operations. No pharmacist need complain of the conditions. The higher and more scientific his attainments and operations, the further will they be removed from all charlatanical influences, and it is in this direction, if we mistake not, that percolation and several other of the more scientific operations recently introduced have been tending.—*Pharm. Journ.*

Collection of Gums in Australia and New Zealand.

Mr. Thomas Kirk, F.L.S., a New Zealand botanist of note, recommends to the notice of colonists in that island the Tragacanth shrub (*Astragalus spec.*) which grows freely in Asia Minor, Armenia, and Persia, and in Northern Syria, at an altitude of five thousand feet, and from whose sap the useful gum known as gum tragacanth is derived. Although not so valuable a product as gum arabic, not being applicable to so many purposes, this gum, nevertheless, forms an important item in the commerce of the Levant, the town of Smyrna alone exporting annually more than £70,000 worth. From the similarity in climate between the colony and the natural habitat of the plant, Mr. Kirk is convinced that the culture of the plant might very successfully and very profitably be taken up in New Zealand, where the collection of its gum would soon rank as an important item among other pursuits of a similar nature. Another gummiferous plant, which has lately attracted much attention in Australia, and which might probably be introduced into other colonies, is the *Eucalyptus resinifera*, usually called the red-gum tree, which yields a volatile, aromatic gum from both its leaves and its trunk. This gum is stated by experts to be almost identical with the better known gum kino, a valuable drug as well as a useful dye, obtained principally from the East Indies, where it is obtained by tapping the trunks of *Pterocarpus Marsupium* Roxb. When the bark of the red gum is wounded in a proper manner as much as sixty gallons of sap, equal to five hundred pounds weight of the drug, may flow from a single tree. Another candidate for tropical colonial culture is the great conifer which yields gum dammar, long a specialty of the Moluccas. The celebrated Kauri pine of New Zealand (*Dammara australis*) is a member of the same family, with the advantage that, though it grows in a temperate climate, it yields a valuable gum of a similar nature. The yield of sap in the species generally is indeed most abundant; so profuse, indeed, that in some of the gigantic Moluccas specimens it exudes spontaneously. The Kauri gum of Auckland, of which such considerable quantities are shipped, is the hardened and semi-fossilized exudation of ancient Kauri trees which ages ago ceased to exist, and whose imperishable product is found below the surface of the ground. This unique industry is, of course, dependent on the exhaustion of the stock of buried gum, and it ought to be supplemented by the careful extraction of gum from the living trees. Properly carried out, this extraction of gum may be a perennial source of profit, while, on the other hand, the improper tapping of the trees may result, as it has too often already, in the destruction of the source of supply.—*The Colonies of India* and *The Chem. Journ.*



A New Corkscrew.

Karl F. A. Wienke, of Rostock, Germany, has patented the corkscrew here illustrated (Germ. Pat. 20,815). After it has been screwed in, in the usual manner, as shown by the horizontal position of the handle in the cut, a movable joint in one of the arms is bent down, and made to rest by the projection, *e*, against the edge of the bottle. The latter is then grasped with one hand so as to keep the joint in position as a fulcrum, and the other end pulled upwards. A great deal of force can be applied in this manner without much apparent exertion.

Preserving Solutions of Salicylate of Sodium.

John C. Martin, the apothecary of the New York Hospital, having found that solutions of salicylate of sodium, no matter by whom the salt may have been manufactured, turn dark soon after their preparation, the color gradually increasing to a deep purple or black, recommends the following stock solution: Salicylic acid, 16 ounces; hyposulphite of sodium, 1 drachm; bicarbonate of sodium, 9 ounces; boiling water, sufficient. Rub the salicylic acid into a paste in a large mortar, with one pint of hot water, and add the hyposulphite. Dissolve the bicarbonate of sodium in one and one-half pints of boiling water, and add it gradually to the first mixture. Filter through white paper, and add sufficient water to make the whole measure four pints. The product has a pale straw color. Glycerin may be used in place of a portion of the water, if desired. The addition of a few crystals of hyposulphite of sodium will decolorize solutions of salicylate of sodium that have darkened.—*Drug. Circ.*

Syrup of Squill and Syrup of Ipecac, Simple and Compound.*

BY R. ROTHER.

AN acidulated preparation of squill is contra-indicated in all its therapeutical applications. Squill is almost invariably given in connection with alkaline, saline, or neutral mixtures. In pharmacy, also, a great disadvantage results when such mixtures are compounded, owing to the fact that physicians forget the acid nature of syrup of squill. This syrup is not only medicinally and chemically incompatible with alkalies and carbonates, but also mechanically with the latter by reason of the persistent frothy effervescence set up in a syrupy liquid. Furthermore, when a fresh vinegar of squill is converted into syrup, the yet unchanged pectose derivative becomes insoluble as a bulky gelatinous precipitate.

The activity of squill is readily extracted by water, but a mixture of the drug and water gets rapidly putrid; if, however, an aqueous menstruum, containing one-eighth its volume of alcohol, is used, putrefaction and fermentation are prevented. Such an extraction yields no precipitate with sugar, and produces an elegant syrup, readily miscible with alkalies and acids without change. When the filtered macerate is treated with ammonia, a considerable greenish precipitate is formed, which rapidly subsides and again quickly dissolves on the addition of sugar, but is wholly prevented when the order of mixture is reversed. Pharmacists will find a neutral syrup of squill very convenient in all such cases where the ordinary syrup is incompatible.

In the preparation of this syrup, as well as of others, and also many tinctures, the method of remaceration proposed by the writer is far preferable to percolation and often more exact. Most crude drugs, such as roots, barks, and leaves, have a pretty definite normal of absorption—that is, capacity for imbibing and holding menstrua. When this has been determined, a simple mathematical calculation will show how much loss is sustained, after obtaining a certain measure of decanted liquid. The normal of absorption of squill with one-eighth alcohol is rather high, but since the drug is cheap, a loss of twenty per cent is immaterial, when there is more than a corresponding gain in definiteness and quality of the product and facility in the process.

One gallon of neutral syrup of squill is prepared as follows:

Take of

Squill, whole	10 Troy ounces.
Sugar, granulated	96 " "
Alcohol, Water,	of each sufficient.

Mix alcohol and water in the proportion of one measure of the first and seven measures of the second, and pour fifty-seven fluid ounces of the mixture upon the squill, contained in a wide-mouthed bottle. Macerate this mixture for three or four days, with occasional shaking, and decant thirty-two fluid ounces of the liquid. Upon the residue pour thirty-two fluid ounces of the menstruum, and after three or four days decant as before. Mix the two decantates, filter and pour the filtrate on the sugar contained in an appropriate vessel; stir the mixture until most of the sugar is dissolved, decant about six pints of the syrup, heat the residue until dissolved, then mix the whole and strain.

Syrup of ipecac is another one of those protean compounds whose radical fault not being understood has caused it to pass through a great variety of changes. In this case the presence of a small amount of pectose matter is, however, only part of the difficulty. The main cause of aberration resides in the large amount of resin that is contained in the root. In some of the former processes of this syrup is was assumed, on the statement that emetine, the active principle, being insoluble in water, acetic acid must be used to render this soluble. But acetic acid brought no advantages for preventing a cloudiness which invariably appeared in the syrup. The resin was excluded in subsequent methods by mixing a fluid extract or a condensed alcoholic extraction with water, filtering, and then adding the sugar; but the cloudiness still appeared, although less obtrusively. The great and particular defect in this method was the fact that the acid resin carried with it a considerable portion of the activity. Later the writer extracted the root with acidulated water containing only enough alcohol to prevent fermentation. Under these conditions the gelatinous cloud was yet manifest, but, subsiding rapidly, left the supernatant syrup clear and bright. Deeming the jelly to be of pectosic origin and finding that a fluid extract of ipecac when mixed with ammonia remained clear, the writer then employed an ammoniacal menstruum and found that both emetine and resin were readily and completely exhausted. The resulting deep-brown solution produced a magnificent dark-brown, clear, and permanent syrup on the addition of sugar.

The formula for 4 pints of syrup is as follows:

Take of

Ipecac, coarsely bruised	4½ Troy ounces.
Sugar, granulated	48 " "
Calcium carbonate	½ " ounce.
Ammonia water	¼ fluid "
Alcohol, Water,	of each sufficient.

Mix alcohol and water in the proportion of one volume of the first and seven of the second, and pour 25 fluid ounces of the mixture together with the ammonia water upon the ipecac contained in a wide-mouthed bottle. Macerate the mixture for 3 or 4 days, shaking it up occasionally; then decant 16 fluid ounces of the liquid. On the residue pour 16 fluid ounces of the menstruum, and after 3 or 4 days' maceration decant 16 fluid ounces as before. Mix the two decantates, add the calcium carbonate, agitate, and filter. Pour the filtrate on the sugar contained in a proper vessel, stir until most of the sugar has dissolved, and decant about 3 pints of the syrup. Heat the remainder until solution is effected, then mix the whole and strain.

The compound syrup of ipecac, or substitute for Dover's powder, is extensively in use. But it is not properly prepared, being fermentable and otherwise unsatisfactory. A permanent and elegant syrup containing ½ a grain each of opium and ipecac in the fluid drachm is prepared by the following ready formula:

Take of

Deodorized tincture opium	8 fluid drachms.
Syrup of ipecac	10 "
Simple syrup, sufficient to make	75 "

Mix.

* Am. Jour. of Pharm.

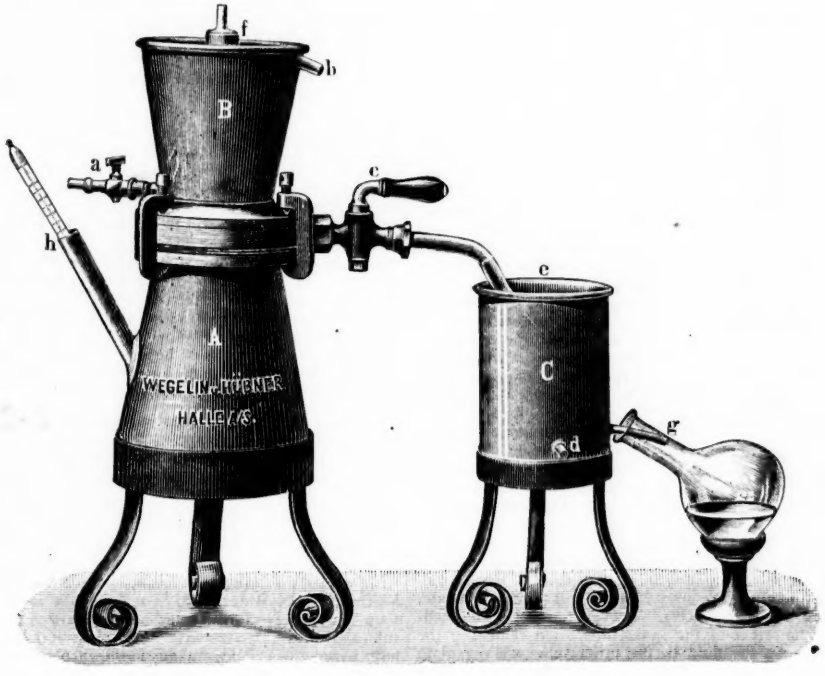
Tests of Copaiba Balsam.

THE thick copaiba balsam, officinal in Germany, has a peculiar relation to ninety per cent alcohol, which is not only a proof of its good quality, but detects the presence of most possible adulterants. The thick Maracaibo balsam gives a clear solution, with one, and often with two parts of ninety-per-cent spirit. If two or three more volumes of the same spirit are added, the mixture becomes, after shaking, very turbid and almost milky. If the balsam to be tested is mixed with a volume and a half of ninety-per-cent spirit, a clear solution should result. If it is turbid, there may be present rosin oil, colophony, gurjun balsam, or some fatty oil. If the solution is clear, it is further diluted with its own volume or a volume and a half of the same spirit. It ought to become very turbid. If it remains clear or becomes only so slightly turbid that a layer a centimeter thick does not hinder vision, the balsam is adulterated with castor oil, turpentine oil, or turpentine. Sassafras oil alone does not interfere with the relation of the balsam to the spirit.—DR. H. HAGER, in *Pharm. Centralhalle* and *Chem. and Drug.*

An Improved Extraction Apparatus for Laboratories.

THE well-known firm of Wegelin & Huebner in Halle a. d. Saale (Germany), several of whose appliances we have described and illustrated in previous volumes, have placed on the market a new and very compact extraction apparatus, which is suitable for the purposes of a laboratory, to make experiments, assays or any other determinations on a small scale.

A is a boiler which is best filled with paraffin, though oil, water, or other liquids may also be used. It contains two smaller vessels, as insets, the smallest of which is destined to receive the substance to be extracted, and the larger or outer one for the reception of the menstruum. The latter also receives the saturated solution, and condenser *B*, and flows back, as liquid, upon the substance in the inner vessel, through which it percolates, and which is gradually exhausted of all soluble matters. In the course of one or one and one-half hours, the extraction is usually completed, and the next step is the recovery of the solvent. For this purpose, the faucet *c* is opened (as shown in the cut), the circulation of water in *B* is interrupted, and the rubber-tubing connected with the corresponding outlets in *C*. A suitable receptacle *g* having been placed below the outlet of the worm, the distillate is collected. The recovery of the distillate requires about two to two and one-half hours. [We believe it requires a much shorter time, unless the temperature is kept very low.] Before taking the apparatus apart, it should be allowed to become somewhat cool; it is then disconnected, and the two inner vessels taken out, one of which contains the extract, while the



Wegelin and Huebner's Extraction Apparatus.

ains the extract after the menstruum has been distilled off. The smaller vessel has no metallic bottom, but in place of it a piece of muslin is tied on, which may be further covered, on the inside, with filtering paper. The substance to be extracted is placed into this vessel, which may be filled to within about 1 *cm.* from the upper margin. The quantity of menstruum usually required (carbon disulphide, ether, alcohol, benzin, etc.) is about 200–250 grams, which are poured in the outer vessel. The upper portion *B* of the extractor, which serves as a condenser, is then placed on top and fastened on by means of the clamps. Rubber-tubing having been attached to *a* and *b*, cold water is made to circulate in the condenser *B*, the water entering at *a*, and being discharged at *b*. Everything being ready, and the faucet *c* being turned off (at a right angle to the tube in which it is situated), the boiler *A* is heated by a gas or alcohol flame, and the temperature *carefully* regulated by the thermometer. The solvent in the outer vessel situated within the boiler *B*, on being volatilized, comes in contact with the cold walls of the condenser, and flows back, as liquid, upon the substance in the inner vessel, through which it percolates, and which is gradually exhausted of all soluble matters. In the course of one or one and one-half hours, the extraction is usually completed, and the next step is the recovery of the solvent. For this purpose, the faucet *c* is opened (as shown in the cut), the circulation of water in *B* is interrupted, and the rubber-tubing connected with the corresponding outlets in *C*. A suitable receptacle *g* having been placed below the outlet of the worm, the distillate is collected. The recovery of the distillate requires about two to two and one-half hours. [We believe it requires a much shorter time, unless the temperature is kept very low.] Before taking the apparatus apart, it should be allowed to become somewhat cool; it is then disconnected, and the two inner vessels taken out, one of which contains the extract, while the other contains the exhausted residue. [Care should be taken, when using a flame as the source of heat, and an inflammable liquid as menstruum, that no vapors of the latter can reach the flame.]

The apparatus is furnished complete, but without burner or alcohol lamp, and without thermometer, at the price of 210 *marks;* without cooler, 170 *marks.*

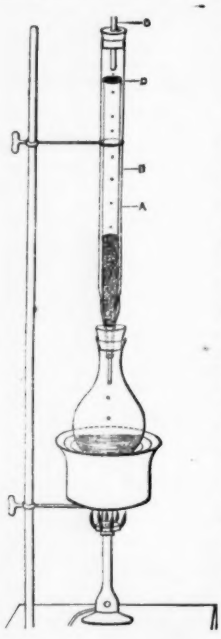
Calculating the Price of Goods.

IN *Moore's Universal Assistant* is found a handy rule for calculating the price at which articles bought by the dozen should be retailed by the piece to make a profit of twenty per cent, viz.: Divide what the article costs per dozen by ten, which is quickly done by removing the decimal point one place to the left. For example, a dozen costing $17.50 should be sold for $1.75, or if it costs $31.00 per dozen, they should sell for $3.10.

Continuous Extraction Apparatus.

WYNDHAM R. DUNSTAN and F. W. SHORT describe, in the *Pharm. Journal and Transactions*, of February 17th, the following modification of Tollen's apparatus (see NEW REMEDIES for 1879, p. 293) which may be used either for digestion, repercolution, or for both at the same time, the whole operation being conducted at the boiling point of the solvent.

It consists of two glass tubes, A and B, the larger one being indented so as to form two ledges for supporting the smaller one in the position shown. These indentations can easily be made when the tube is red-hot, by means of a crucible tongs. The tube A should not be too long, or the vapor rising from the flask will be condensed more or less, before reaching the condenser, C. The substance to be exhausted is placed in the inner tube, the narrow end of which has previously been plugged with cotton-wool. A cap of wire gauze, D, fits upon the upper end of tube B to prevent its contents from being driven out. Its use, however, can generally be dispensed with. The contracted end of the large tube is passed tightly through an opening in the cork which closes the flask, and the other end is stopped with a cork through which the condenser tube, C, passes. The length of the tube C depends upon the nature of the solvent used.



When the apparatus is to be used for digestion, the lower end of the inner tube should be drawn out to a fine orifice and should extend some distance below the rim of the outer tube. The vapor of the solvent will pass up the space between the inner and outer tube and, being condensed in the tube C, will drop into the inner tube and form a column of liquid above the marc which it will slowly permeate. While the liquid is boiling, however, but little fluid will fall from the orifice of the inner tube. On removing the source of heat, the fluid in the inner tube will percolate through the marc and fall into the flask; the operation can then be repeated with a fresh portion of solvent.

If the inner tube be drawn out so that it extends but a short distance beyond the outer tube, as shown in the illustration, and its orifice be larger, digestion and percolation will proceed simultaneously.

The gentlemen referred to say that they have made over two hundred extractions with this apparatus, using different solvents, and recommend it as capable of accomplishing complete exhaustion in a short space of time.

On the Preservation of Syrup of Iodide of Iron.

BY C. VAN WISSELINGH.

SOME time ago, J. de Groot published a paper in the *Pharmaceutisch Weekblad* (1882, Sept. 17th), in which he states that syrup of iodide of iron which had been kept in an open burette, and which was protected from contact with air by a layer of oil, was found to have lost 3 per cent of its ferrous iodide. This statement induced the author of the present paper to examine the subject carefully, and his results are detailed below.

Three burettes of 100 *cc.* capacity were nearly filled with freshly-prepared syrup of iodide of iron, and a layer of 5 *cc.* of some fixed oil poured on top of each, the following oils being selected: almond oil, olive oil and castor oil. A small quantity of fixed oil would have served equally well to prevent contact with the air. I took a larger quantity to see what effect the oil itself would have on the syrup.

The percentage of ferrous iodide was determined by titration with a solution of mercuric chloride. As is well known, the addition of this reagent to a solution containferrous iodide in excess, produces a red precipitate of mercuric iodide which is dissolved on stirring, as it forms a soluble double salt with the still undecomposed ferrous iodide. Whenever the precipitate no longer redissolves on stirring no more ferrous iodide remains undecomposed, and the reaction is completed. The solution of mercuric chloride is made of such a strength that 10 *cc.* of it are required, in presence of 1 gram of ferrous iodide, to reach the point when a further addition will produce a permanent precipitate. In the actual titration I employed 5 grams of the syrup, carefully weighed, and afterward diluted with 5 *cc.* of distilled water. In order to convince me that the above method yields correct results, the percentage of iodine was also determined by distillation with ferric chloride, by titration with hyposulphite of sodium and also with nitrate of silver, chromate of potassium being used as indicator in the last-named case. The results of all these methods of assay were found to agree well among themselves, and with that above detailed.

Immediately after being prepared, the syrup in the different burettes contained, theoretically, 19 per cent of ferrous iodide. The different assays gave figures varying from 19 to 19. 2. Several times during each week, in the course of one month, the assay of the syrup in each burette was renewed, and no diminution of the percentage noticed. After four months the assay again yielded from 19 to 19.2 per cent of ferrous iodide.

Now I determined to examine that portion of the syrup which was immediately below the layer of oil. Enough syrup was drawn from each burette to retain about 10 *cc.* of which two separate assays were made. The mean results obtained were the following.

Syrup kept under almond oil.....19.17 per cent.
" " " olive " .....19.17 " "
" " " castor " .....19.13 " "

Finally the oils were examined. They all had acquired a more or less brown color; the castor oil was very dark, less so the olive oil, and the almond oil had assumed only a brown tint. To estimate any iodine present in the oils, I used the following method. The oil was saponified with alcoholic solution of potassa, by the aid of a few hours' heating on the water-bath, in a porcelain capsule. The soap was then carefully heated and carbonized, in the capsule, the mass lixiviated with water, the solution acidulated with hydrochloric acid, and any iodide of potassium present determined by solution of mercuric chloride, three times more dilute than that mentioned above. A preliminary experiment convinced me of the reliability of this method. Although in all three solutions the presence of traces of iodine could be detected by chlorine water and chloroform as well as by nitrate of silver, yet the quantity was so minute that I could not estimate it quantitatively.

These results show that de Groot's statements cannot be correct. He states that he found a diminution of 2.941 per cent of ferrous iodide in a syrup standing two months. I could not detect any diminution of the percentage even after four months, and only noticed the syrup becoming somewhat lighter of color, while the oils took up only a minute trace of iodine.—After *Nieuw Tijdschrift voor de Pharmacie*, 1883, 77.

Note.—Many years ago, we have made experiments on the keeping of syrup of iodide of iron, and have found that it may be kept in bulk, in any quantity, if it be protected from contact with air by a layer of oil on the surface. A large stone-jar, with a glass-faucet at the bottom, will be found a useful receptacle. Or, a glass-siphon may be kept in the jar, reaching nearly to the bottom, the outer arm being provided with a short piece of pure rubber tubing and a pinchcock.—ED. N. R.

Atropine in Earache.

AN article under this heading is going the rounds of the journals, having appeared in the *Medical Record* in September last, in which Dr. A. D. Williams recommends the instillation into the ears of children of a warm solution of one to four grains of sulphate of atropine to the ounce of water, as a never-failing remedy for "earache" not due to inflammation.

The doctor further says that for adults the solution may be of almost any strength.

One is inclined to doubt the value of a remedy of which its proposer says that it has "stood the test of years;" "not a single case but has yielded at once;" "in the recurring nocturnal earaches of children, it is practically a specific."

Earache in children is usually due to one of a few causes: Either there is inflammation, there is neuralgia from malarial poisoning or decayed teeth, there is pain due to cerebral disease, or there is a tense tympanic membrane caused by swelling of the mucous membrane lining the Eustachian tube, and interference with the passage of air, so that when the air of the middle ear is absorbed, and a partial vacuum results, the membrane of the tympanum is rendered over-tense by the atmospheric pressure, and pain is caused. The latter will be found to exist in the great majority of cases, and the cure consists in inflating the middle-ear, and not in pouring a solution of atropine or of anything else into the external canal. The next thing to be done is the relief of the sore throat or nasal catarrh that has led to the swelling of the Eustachian canal.

Valsalva's method of inflating the middle ear is not entirely free from risk, but it is far safer than the indiscriminate use of such a poison as atropine. It is done by taking a deep breath, holding the nose, closing the lips tightly, and then forcing air into the middle ear by an expiratory effort of the chest and abdominal muscles. This procedure will commonly put a stop to earache almost instantly.

Dr. Williams acknowledges the inutility of atropine in inflammatory troubles. It certainly will not overcome the partial vacuum in the middle ear, and we much doubt its efficacy in relieving pain due to the other causes mentioned.

Testing Extract of Licorice.

PROF. C. L. DIEHL, of Louisville, Ky., having had occasion to examine some commercial licorice paste as to purity, devised a modified method for the estimation of its constituents, and published the same in the February issue of the *Pharmazeutische Rundschau*.

I. Expose 1.0 gram of the mass to a gentle heat until it experiences no further loss in weight. Calculate this loss as moisture.

II. Digest 10.0 grams of the mass contained in a flask with 100.0 grams of distilled water until it is fully disintegrated; when cold cautiously pour on 200.0 grams of alcohol and vigorously shake the flask. By this procedure the precipitate produced will be prevented from adhering to the sides of the vessel. Allow it to stand for several hours, shaking occasionally, then pour on a double thick filter of sufficient size, and wash the remaining dregs with a mixture of two parts of alcohol and one part of water until the filtrate begins to pass colorless.

III. After the foregoing residue has become air-dry, exhaust the same with distilled water, so that the filtrate may pass colorless; reduce the latter to a small volume and then transfer to a small tared porcelain capsule, being careful to remove any residue from the larger evaporating dish by means of a little warm distilled water, adding the rinsing to the contents of the small capsules. Evaporate to dryness by means of a gentle heat, and calculate the residue as gummy matter.

IV. Carefully dry the dregs remaining on the filter under III., employ the outer filter as counterbalance and calculate as insoluble substance.

V. Carefully concentrate the alcoholic filtrate obtained under II. to the consistence of syrup and redissolve in distilled water. Then, to the clear solution, add dilute sulphuric acid gradually until a precipitate (glycyrrhizin) ceases to be produced: Wash the glycyrrhizin with cold water, allow to dry at the ordinary temperature, and dissolve in strong alcohol, whereby about fifteen per cent of insoluble tasteless residue will remain, which, however, is soluble in ammonia. Now filter the alcoholic solution of glycyrrhizin, wash the filter with alcohol, evaporate the combined filtrates to dryness, then redissolve the residue in a small quantity of ammonia, again evaporate to dryness in a tared capsule, and estimate as ammoniated glycyrrhizin. —*The Druggist.*

Varnish for Labels.

BY S. A. MCDONNELL.

A PRACTICAL way of reducing to a minimum the annoyance arising from having to look up a prescription from the data of a soiled, defaced or mutilated label, whenever presented for renewal, is here submitted.

I suppose that you have all experienced a sensation akin to despair upon glancing over the remains of what had been a neat label on a fair bottle—the said bottle having been presented to you with the modest request: "I want to have this bottle filled with the same medicine as before."

As we cannot make the public feel the necessity of wiping the drop from the lip of a bottle, nor induce our customers to always pour from the side of the neck opposite to the label, circumvention becomes necessary. It is, in a great measure, accomplished by the aid of the "Label Preserver," which is made as follows:

℞ Laccæ albæ	ʒ i.
Plumbi carbonatis	ʒ iv.
Ætheris	O. ss.

Place the white shellac in a mortar, and reduce to a moderately fine powder; then transfer to a bottle containing the ether, and set aside, shaking the bottle occasionally, until the powder resolves itself into a uniform solution; then add the lead, in fine powder; shake well, and filter through paper, returning the first portions of the filtrate, two or three times, until it comes through perfectly clear. To prevent the loss of ether, by evaporation, in the absence of a more suitable contrivance, while filtering, place four or five folds of paper on the counter, on which rests the bottle containing the funnel and the filter, over which place a ring-jar (or a tin-can)—one that will just fit being preferable to a much larger one— (the larger the jar the more space to be occupied by the ether vapor). Ordinary shellac may be used, but it imparts a brownish color to the labels.

Now, whenever I get a recipe containing label and ink destroyers, such as the diluted acids, mixtures containing acids, fixed oils, or glycerin, I invariably apply a coating of the "Label Preserver."

The prescription being compounded, write and paste the label, and place it upon the bottle; smooth as usual (it is not necessary to wait until it dries); then, removing the cork, dip into the "Label Preserver" a rather bushy camel-hair pencil, and, withdrawing it, apply it to the label, in the direction of from top to bottom, in preference to cross wise; a single stroke to each untouched portion of the label (to prevent lapping, which shows when dry). Having replaced the cork in the "Label Preserver" bottle, take a rag, and squeeze out the remaining portion of the liquid from the brush, by drawing it through a fold of the cloth held between the thumb and forefinger; after which give the brush a prod or two by forcing the hairs on the palm of the hand—gently—which separates the hairs sufficiently to prevent them from sticking together; then sel aside, when it will be found in good order for the next application. By the time that you have done this, which will scarcely exceed a minute, your bottle can be wrapped up, and delivered immediately to your customer. When at bottle, thus treated, is brought back for renewal, the lable

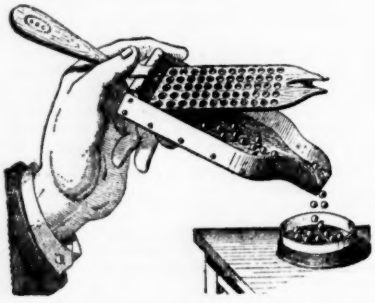
is found to be intact, legible, and as smooth as glass. It may be washed, scrubbed, or otherwise treated, and still remain clean and nice.

This is an excellent coating for all paper labels for bottles which do not contain strong alcoholic liquids, for ointment jars, shop bottles, etc.; particularly if two or more coats are applied, it dries hard and smooth, and the warmth of the hand makes no impression on it, wherein it is unlike any of the varnishes now in use.—*Proceed. Cal. Pharm. Soc. and Coll. Pharm.*, 1883, 42.

Transparent-Varnish.

Shellac, best bright-orange, bruised..	88	parts.
Shellac, bleached, bruised.....	176	"
Sandarac, powdered.....	16	"
Absolute alcohol 1000		"

Add the absolute alcohol to the mixed resins in a flask, add a little coarsely powdered glass, and shake the flask occasionally until all soluble matters are dissolved. Then set the flask aside for a month, pour off the clear solution, and filter the residue through absorbent cotton. If the solution is needed in a hurry, the resins may be digested with the alcohol at a gentle heat.



Pill-Counter.

For persons who have to box large numbers of pills, the little instrument shown in the drawing is very convenient. It is a sort of scoop, with a perforated false bottom hinged on to the handle end. The perforations are made of the size of the pills or capsules to be counted. On scooping up a quantity and slightly shaking up the apparatus, the required number drop into their holes, and the rest are allowed to fall back. On raising the false bottom, the pills drop through, and are slipped into the box *via* the spout. This instrument is made by Messrs. A. B. Clarin & Co., of Paris.—*Chemist and Druggist.*

Disinfecting Pastilles.

Mr. C. Tanret has been very successfully endeavoring to make fumigating pastilles that should be not merely pleasantly odoriferous but disinfecting. Pastilles made in the ordinary way with charcoal, nitre and the usual sweet smelling compounds, may be soaked in liquid antiseptics like creasote and eucalyptol or, if solid like carbolic acid and thymol, the disinfectant may be melted at a low heat, and dropped upon them until they will absorb no more. An eighth of an inch or so of the apex of the cone must be left free, otherwise the pastille will not light. It is better to drop a determinate quantity of the disinfectant on each pastille, as by soaking, if very porous, they are liable to imbibe too much to burn steadily, besides which, in the case of thymol and carbolic acid, crystals will form on the surface. During the combustion of these antiseptic pastilles there is an actual distillation of the antiseptic which passes off into the air of the room in which they are burnt, in the form of vapor, very little of it being decomposed by the heat, both creasote and carbolic acid, for instance, being themselves produced at a high temperature. This is easily proved by the characteristic odor of the vapor. Although the thymol pastilles only contain half as much of the disinfectant material as those made with carbolic acid, they are, nevertheless, twice as strong as the latter, the disinfecting powers of carbolic acid and thymol being as 1 to 4 [? Ed. N. R.], according to Kuhn and Jalan de la Croix. No doubt the inhalations of the fumes of such pastilles would be of great service in diseases of the respiratory organs.—*Rép. de Pharm.*

On the Preparation of Spirit of Nitrous Ether.

The following remarks are taken from the recent work of Dr. B. Hirsch on the differences between the old and the new German pharmacopœias,* and will be found of great practical value.

"The directions for preparing sweet spirit of nitre have undergone many alterations, in the course of time, and differ even now considerably in different countries. The preparation of the French Pharmac., for instance, is merely a mixture of 3 parts of alcohol with 1 part of nitric acid (sp. gr. 1.31), which is allowed to stand for two or three days, in a stoppered flask, with occasional lifting of the stopper, and is then ready for use. The older Prussian pharmacopœias directed to distil a mixture of 4 parts of alcohol and 1 part of crude nitric acid, and to rectify from magnesia. The Ph. Boruss., VI., directed to distil, at a gentle heat, 8 parts of alcohol (sp. gr. 0.810) with 1 part of fuming nitric acid (sp. gr. 1.520), to rectify over magnesia, and to reject the first five per cent of distillate passing over, which contained the largest amount of nitrous ether. This last-named feature was eliminated in the directions given by J. E. Schacht in his Supplement to the Pharm. Bor., VII., which had abandoned the preparation. Schacht also introduced the distillation from the *water-bath*.

This method of distillation is particularly to be recommended, but is not prescribed by Pharm. Germ. I. or II. It prevents overheating, and yields, up to a certain moment, a perfectly neutral distillate, nearly of the full quantity directed by the pharmacopœia, which does not require to be neutralized by magnesia, or to be rectified, these operations being only requisite for the fractions passing over last.

So far as I am aware, no one has as yet drawn attention to the considerable loss occurring even with the most careful distillation and cooling. The lost portion easily escapes notice, since it constitutes an almost indifferent and nearly odorless gas. On distilling, without special precautions, 1875 grams of the acid mixture, 110 grams, or 5.87 per cent, were lost; the loss from 2,000 grams, under hermetic exclusion from air, and with the employment of a safety-tube dipping into a liquid (so as to form a water-joint), amounted to 105 grams, or 5.25 per cent. In the latter case, the development of gas became visible, after 1,000 *cc.* had passed over with employment of the most gentle heat; the largest amount of gas (corresponding to a water-pressure of nearly 2 *cc.*) was given off after 1,150 *cc.* had passed over; from this point it again sank to between 2 and 1 *cc.* water-pressure, although, at this period, the distillation proceeded at a more rapid rate, even when the temperature was lowered. The gas itself was odorless, and rendered lime-water only faintly turbid. Only after 1,5000 *cc.* of distillate had been collected, could the odor of hydrocyanic acid be perceived. The whole distillation was conducted very slowly, occupying fully ten hours' time.

The two trials conducted as above, with the aid of a water-bath and a very gentle heat only, yielded the following fractions of distillate:

1. Distillation of 1,500 grams of alcohol (sp. gr. 0.832) with 375 grams of pure nitric acid (sp. gr. 1.185):

*Vergleichende Uebersicht zwischen der ersten und zweiten Ausgabe der *Pharmacopœa Germanica*. Von Dr. B. Hirsch, Apoheker. 8vo. Berlin, 1883.

1.	200 grams,	sp. gr	0.838	at 17° C.
2.	200 "	"	0.8405	"
3.	200 "	"	0.845	"
4.	205 "	"	0.846	"
5.	205 "	"	0.8495	"
6.	210 "	"	0.8595	"
7.	30 "	"	0.865	"
	1250 "	(corresponding to the quantity of distillate directed by the Pharm. Germ.)		
8.	140 "	sp. gr.....	0.880	at 17° C.
9.	375 "	"	1.003*	"
	1765 "	(hence there is a loss of 110 grams.)		

Fractions 1 to 5 were completely colorless and without the least acid reaction.

Fraction 6 was about half colorless, then became like

Fraction 7, yellowish, acid, and containing hydrocyanic acid.

Fraction 8, yellowish, strongly acid, containing hydrocyanic acid.

Fraction 9, remainder left in retort, almost entirely colorless, strongly acid.

II. Distillation of 1,600 grams of alcohol and 400 grams of nitric acid, both of the above-mentioned strength:

1.	936 grams,	sp. gr.....	0.843	at 15° C.
2.	293 "	"	0.865	"
3.	141 "	"	0.876	"
	1370 "	(the Pharm. demands 1333⅓ grams.)		
4.	75 "	sp. gr	0.893	at 15° C.
5.	450 "	"	0.979*	"
	1895 "	(hence there is a loss of 105 grams.)		

Fraction 1 was colorless, not acid.
" 2 " yellowish, acid.
" 3 " " " with hydrocyanic odor.
" 4 " colorless, " " " "

The second experiment was made with a safety-tube dipping into a liquid. The slight pressure thereby produced appears to have produced a more profound reaction of the ingredients, to judge from the higher specific gravity of the fractions 2 to 4, and the lower specific gravity of the residue, although the latter is larger in quantity than in the first experiment.

According to the new German Pharmacopœia, a mixture of 48 parts of alcohol (sp. gr. 0.830–0.834) and 12 parts of nitric acid (sp. gr. 1.185) is allowed to stand during twelve hours, and then distilled in a glass retort, until 40 parts of distillate have been collected. These are to be neutralized with calcined magnesia, and after twenty-four hours to be rectified from a water-bath.

Since the neutralization with magnesia is completed within a few minutes, it is unnecessary to waste time. Besides, if the distillation is carried on carefully, on the water-bath, the first 30 parts of the distillate will not require neutralization or rectification at all. Of course, the total quantity of the product (reserved and rectified portion) must be mixed immediately when completed. It will then have the specific gravity of 0.847 to 0.848 at 15° C.

The Pharmacopœial Extracts of Aloes and their Preparation.†

BY ROBERT AITKEN.

THE above subject was brought under my notice in the following manner: A short time ago, a friend of mine complained that a prescription which had been made up in different towns varied very much in effect. The prescription was for one-grain pills of extract of aloes, combined with a little capsicum. As the variation evidently lay with the extract of aloes, I procured a sample from a firm who had dispensed the prescription, and was rather surprised to find it contained about thirty per cent of resin, which no doubt accounted for its weak action. A second sample procured from another firm who had also dispensed the prescription, gave about eight per cent of resin. These experiments led me to an examination of several samples of extract, and I found that all those tested gave evidence of the presence of resin, some in large proportion, some in small. To elucidate the matter further, twelve samples of extract (both Socotrine and Barbadoes) were procured from Edinburgh, London, and Dublin, and examined with the following results:

No. 1. Socotrine, gave 20 per cent of resin.
No. 2. Barbadoes, gave 25 per cent of resin.
No. 3. Socotrine, gave 25 per cent of resin.
No. 4. Socotrine, gave 25 per cent of resin.
No. 5. Socotrine, gave 10 per cent of resin.
No. 6. Barbadoes, gave 8 per cent of resin.
No. 7. Socotrine, gave 8 per cent of resin.
No. 8. Barbadoes, gave a trace of resin.
No. 9. Barbadoes, gave 6 per cent of resin.
No. 10. Socotrine, gave 8 per cent of resin.
No. 11. Socotrine, gave 15 per cent of resin.
No. 12. Barbadoes, gave 20 per cent of resin.

The method I employed was as follows: A certain quantity of the extract was weighed out, powdered, and dissolved in boiling distilled water; on allowing it too cool, the resin gradually deposited on the sides and bottom of the mortar; stirring seemed to facilitate the separation. The resin was collected on a weighed filter, and well washed with cold distilled water until the washings were colorless. The filter was then dried and weighed; the difference between the gross weight and the weight of the filter giving the amount of resin present. In most of the samples which contained a large quantity of resin, the latter separated in a sticky mass; in those which contained least, the resin was suspended in the solution as a fine brown powder, in some instances so fine as to run through a paper filter.

The different varieties of aloes as prepared for the market contain a considerable amount of resin, caused by the heat employed in evaporating the juice; and in order to free the aloes from this and other inert matters, the [British] Pharmacopœia orders the preparation of the extracts of Socotrine and Barbadoes aloes. Consequently one would expect these extracts to be perfectly free from resin. The Pharmacopœia recommends two methods of evaporation—either by means of a water-bath or a current of warm air. In order to ascertain whether the first process would yield an extract free from resin, I prepared some extract from Socotrine aloes, and evaporated the liquid by means of a water-bath. I obtained about fifty per cent of extract, and on testing it found resin even in portions which had not come in contact with the sides of the porcelain vessel used for evaporation. I then made another sample of extract, but used a current of warm air instead of the water-bath. The result was an extract perfectly free from resin. Some of this last sample was then exposed to an increased heat on the top of a boiler, and after a short exposure, showed the resin in the form of a fine brown powder, thus showing how prone the drug is to change under the influence of heat.

From these experiments it will be seen that in order to procure the extract free from resin, the second method ought alone to be used, and even that carefully attended to.

The cause of so much difference in the extracts is owing, I consider, to careless preparation; very few, evidently, choosing to prepare them by the slow process, and those who are in the habit of making large quantities are more apt to adopt the quicker method of water or steam-bath, though, as I have shown, such a method would lessen considerably the activity of the extract by the formation of resin.

* Residue in retort.
† Read at a meeting of the North British Branch of the Pharmaceutical Society.

Clinical Indications for the Use of Convallaria Majalis.

DR. E. C. TRUDEAU, of Saranac Lake, N. Y., writes to *The Medical Record* his experience with the use of *Convallaria majalis* for a year past and expresses his belief that it is most successful in all cases, where, to restore the balance of the *right* side of the heart is imperative, while it is a much less active when increased energy on the part of the left ventricle is called for. Its striking power in controlling dyspnœa in cases of emphysema, fibrous and chronic phthisis (cases in which digitalis frequently fails), in relieving the orthopnœa of mitral disease, increasing, at the same time, the flow of urine, and its failure to mitigate the symptoms of aortic mischief or to increase of flow of urine in such cases are clinical facts which tend to confirm this suggestion. It is in relieving dyspnœa that *Convallaria* attains its most brilliant results, while it has only an uncertain and trifling power over œdema and dropsy, and it succeeds often in precisely the cases in which digitalis fails. Another indication for its use, not hitherto dwelt upon, is in controlling the symptoms of purely functional heart disorder.

Paroxysmal palpitation and dyspnœa due to nervous causes, rapid and irregular heart-action dependent upon debility, are symptoms almost always benefited by it, and which often entirely disappear during its exhibition.

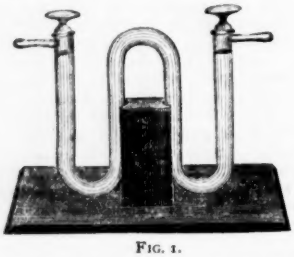


FIG. 1.

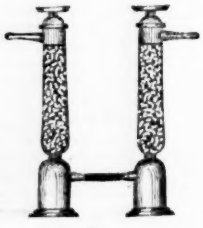


FIG. 2.

FIG. 3.

FIG. 4.

Improved Absorption Apparatus.

DR. ROBERT MUENCKE, of Berlin, draws attention to the superior advantages of absorption tubes closed by means of carefully ground glass-stoppers provided with lateral tubes, over the heretofore usual method of connection, viz., by means of perforated rubber stoppers.

The shape of such absorption tubes may be varying. If they are to be placed on a balance to be weighed, Fig. 1 will be found convenient, as the middle arc may be suspended by a wire from one arm of the balance. Figs. 2 to 4 are good forms of drying tubes for gases, to be filled with pumice-stone saturated with sulphuric acid, etc. The absolute incorrosibility of the stopper will be of particular advantage, when corrosive gases, such as chlorine, sulphurous acid, etc., are to be passed through the apparatus.

St. Germain Tea.

THE so-called St. Germain tea, *Species laxantes St. Germain*, has long been a favorite laxative in Europe. It is gentle in operation, pleasant to take, and is not only often prescribed by Continental practitioners, but also much used as a domestic remedy. Its action mainly depends on the presence of senna leaves and of cream of tartar. Heretofore it has been customary to employ senna previously treated with alcohol, so as to extract the resin which has been held to be the cause of griping. The new German Pharmacopœia, however, has altered the formula for this remedy, inasmuch as it directs unaltered senna leaves and increases the proportion of cream of tartar by nearly three per cent. The new preparation ("Laxative Species") is therefore not identical with the St. Germain tea, but is evidently intended by the revisers of the Pharmacopœia to ake the place of the latter.

As the preparation is very frequently prescribed or called for in many parts of this country, we append the officinal formula of the new German Pharmacopœia, to which we attach some practical remarks by Dr. Bruno Hirsch:

	Parts.
Senna leaves, cut	16
Bitartrate of potassium, powdered	4
Sambucus (elder-flowers)	10
Fennel	5
Anise	5
Total	40

Moisten the senna leaves (with a very small quantity of water), sprinkle upon them the bitartrate of potassium as uniformly as possible, mix thoroughly, then dry them and finally mix them with the sambucus, fennel, and anise.

Dr. Bruno Hirsch* remarks to this: This method causes the powder to adhere only partially to the leaves. To the many propositions for *fixing* the powdered cream of tartar upon the senna leaves, I would like to add one more, which consists in *generating* the salt in and upon the leaves, instead of adding it ready-formed. For this purpose, the dry leaves (or the leaves faintly moistened about an hour previously) are intimately mixed in a porcelain capsule, first with a concentrated (about one in three) solution of tartrate of potassium, and afterwards with an aqueous or alcoholic solution of tartaric acid; after thorough mixing, the whole is dried at a gentle heat. The proportions are, of course, chosen so that the product corresponds to the directions. To 16 parts of senna leaves, therefore, a solution of 2.5 parts of tartrate of potassium is first to be added, and afterwards a solution of 1.6 (1.596) parts of tartaric acid. Unless an excess of solvent is used, both solutions are soaked up by the leaves without their giving off any soluble matter, which would show by staining the capsule. Soon after drying, the leaves are a trifle altered in color, but show nothing specially notable; each minute fragment, however, has a most decided cream of tartar taste. Gradually, after several days, a white film of cream of tartar appears on the surface. This is at first only visible under a lens, but after a while also with the naked eye. This film adheres much more firmly than any powder mechanically mixed with the leaves. The largest quantity is inside of the substance itself. This method of impregnation may be employed equally well upon Alexandrian and upon Tinnevelly, crude as well as alcohol-washed senna. It is only necessary to employ *cut* leaves, at least in the case of Tinnevelly senna, since the comparatively large surfaces of the latter would otherwise easily adhere to each other.

* In his *Vergleichende Uebersicht*, etc. See full title on page 140 of this number.

On Veratrine.

MANY chemists have attempted to clear up the obscurity surrounding the true nature of the alkaloidal substance known under the name of Veratrine, but up to the present time conclusive results do not seem to have been reached. The latest publication on the subject, however, by Dr. Emil Bosetti,* appears to throw considerably more light on the subject. The original paper being too long to be inserted here, we content ourselves with translating the results obtained by the author, which he sums up as follows:

1. The pure, officinal veratrine consists of a very intimate, externally amorphous mixture of two, apparently isomeric alkaloids having the composition $C_{32}H_{49}NO_9$, one of which is crystallizable and almost totally insoluble in water; this is the *crystalline veratrine* (the cevadine of Wright and Luff). The other is uncrystallizable, but soluble in water; this is *veratridine* (the soluble veratrine of Weigelin, E. Schmidt and Köppen). Relatively small quantities of the first-named alkaloid are sufficient to render the second insoluble in water. On the other hand, small quantities of the latter are sufficient to prevent the former from crystallizing. Hence it is impossible to separate the crystalline base by recrystallizing the commercial veratrine from any of its solvents; nor can the soluble veratridine be obtained by extracting the commercial alkaloid with water.

2. By boiling with alcoholic solution of barium hydrate the above two alkaloids are split up in the following manner:

a. Crystallizable veratrine is split up into angelic acid and amorphous cevadine

$$\underset{\substack{\text{crystall.}\\\text{Veratrine}}}{C_{32}H_{49}NO_9} + H_2O = \begin{cases} \underset{\text{angelic acid}}{C_5H_8O_2} + \\ + \underset{\text{cevadine.}}{C_{27}H_{45}NO_9} \end{cases}$$

b. Veratridine (which has the same ultimate composition as the preceding, so far as would appear from the analytical data and the nature of the decomposition-products; and which may also perhaps be identical with Wright and Luff's veratrine) splits into veratric acid and amorphous veratroïne

$$\underset{\text{Veratridine}}{2C_{32}H_{49}NO_9} + 4H_2O = \begin{cases} \underset{\text{veratric acid}}{C_9H_{10}O_4} + \\ + \underset{\text{veratroine}}{C_{55}H_{92}N_2O_{16}} + \\ + H_2O. \end{cases}$$

By prolonged contact with water, or by being heated in aqueous solution, veratridine is changed to veratrate of veratroine ($C_{55}H_{92}N_2O_{16}.C_9H_{10}O_4.2H_2O$), which is further decomposed, by diluted acids, into veratroine and veratric acid.

3. The officinal veratrine contains a base isomeric with the crystalline veratrine above described. But this base must be regarded not merely as a modification of the "crystalline" veratrine; on the contrary, it should be regarded as the true isomer of the latter, viz. veratridine. And this last-named substance is, by no means, to be considered a mixture of bases, decomposition-products and salts, as has been stated by Wright and Luff.

4. The amorphous modification of veratrine described by E. Schmidt and Köppen corresponds in composition to the officinal veratrine; but the proportion of crystalline veratrine and amorphous veratridine differs in the two mixtures.

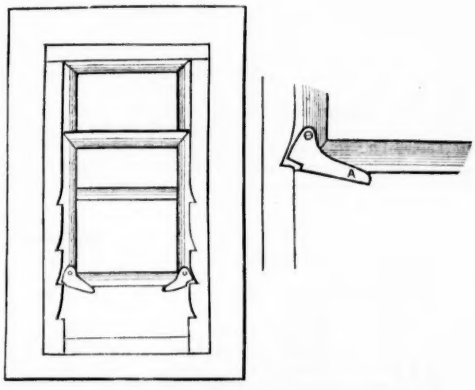
Salicylate of Zinc.

THIS salt is prepared by acting upon hydrated oxide of zinc by means of salicylic acid in presence of water; the two substances digested at a moderate temperature, and the solution filtered. The filtered solution is submitted to evaporation, and then allowed to stand in a cool place, when the salicylate of zinc soon crystallizes in fine white needles of considerable length.

These crystals have first a sweetish taste, but this is soon followed by a styptic and bitter sensation on the palate.

The salt is very soluble in water, and dissolves also in alcohol and ether.

The medical properties attributed to salicylate of zinc are that it forms a valuable antiseptic and astringent agent. In certain kinds of cancerous ulcers, it has, we are told, given some excellent results, and has been used successfully in gonorrhœa, as an injection, in solution containing one-half to one per cent of the salt. Messrs. Poignet and Demarres, two French pharmacists, assert that it is preferable to sulphate of zinc as an astringent in ophthalmic affections, and in other cases, since it combines with its astringent action the antiseptic properties of salicylic acid.—*The Monthly Mag. of Pharm.*



Door-fastener for Fume-Closets.

MR. THOMAS FLETCHER sends the following communication to the editor of the *Chemical News*:

SIR:—The balance-weights and springs commonly used for the openings of fume closets are a dangerous nuisance, and accidents are constantly occurring. The arrangement I have had in use for several years has now been copied in several laboratories, and has proved so perfectly satisfactory that a description will no doubt be acceptable to many. The window slides easily upwards, and by preference inside the upper part. On each side is a loose catch of hard wood, preferably boxwood, so shaped that by its own weight it drops into a recess cut in the frame carrying the window. When lifted to any height the catches drop in the nearest recess, and to release them it is simply necessary to take hold of the projections at the point marked A, these projections forming handles by which the window is lowered. It is advisable to have one on each side in case either sticks from dirt or any other cause, although for all practical purposes one is sufficient.

This arrangement has been in daily use for many years without the slightest slip or accident of any kind, whereas, with the balance-weights and springs used previously it was necessary to replace these every few months, and even with every care accidents occurred frequently owing to the rapid and sometimes unexpected destruction of cords or springs by corrosive vapors.—*Chem. News*, March 23d.

Salicylate of Sodium in Acute Orchitis.

DR. HENDERSON, of Shanghai, reports, in *The Lancet* of December 16th, three cases of gonorrhœal epididymitis which were rapidly relieved by salicylate of sodium. He advises that it should be used in acute cases only, and in dose never less than a scruple, repeated every hour for at least three doses, after which the interval may be lengthened.—*Med. Record.*

* *Archiv der Pharm.*, 1883, vol. xxi., 81: Mittheilungen aus dem Universitäts-Laboratorium zu Halle a. S. Von Prof. Ernst Schmidt. II. Studien über das officinelle Veratrin. Von Dr. Emil Bosetti.

Notes on Perfumery.*

BY W. A. WREN.

BERGAMOT, the essential oil obtained from the fruit of *Citrus Bergamia*. It is very similar to the lemon, being golden yellow in color externally, smooth peel, and pale yellow pulp. The flowers, however, resemble those of the bitter orange. The tree *Citrus Bergamia* is cultivated in Sicily, and more especially in the neighborhood of Reggio. The oil is obtained by expression, though formerly by the sponge process, from the fruit in a partly unripe state, gathered in the end of the year—November and December. New essences are now just arriving in London. The quantity of oil obtained is about 3 oz. from 100 fruits. The oil, when newly prepared, deposits an albuminoid substance, and in a month or so a white fat, called "bergaptene" or "bergamotte" camphor. The green tint is due to chlorophyll, which, in a very minute quantity, may be coagulated by heat and separated by filtration, leaving the oil with a brownish tint.

The sp. gr. is about .880 to .890 in genuine samples. Hanbury gives .860 to .880; some samples gave sp. gr. .858 and .865. These were found to be adulterated, probably with turpentine and essence of lemon, the sp. gr. of the former being as low as .853, and of the latter .832 to .880. The quanity of oil used in perfumery is very great, and the shipments, which are made principally from Palermo and Messina, are still on the increase.

By mixing together

	Cubic centimeters.
Essence of bergamot	40
Spirits of wine	5
Nitric acid, sp. gr. 1.200	10
Water	45

and allowing this to stand for two months, shaking about twice a week, I obtained a fine crop of crystals (samples of which I place before you this evening). They resemble those of terpin hydrate as obtained by Mr. R. H. Parker from oil of turpentine.

Essence of bergamot is a feature in the perfume Essence Bouquet, said to be a favorite scent of George IV.

CLOVES, the flower-buds from the evergreen *Caryophyllus aromaticus*, are so well known that I will not dwell upon them. Suffice it to say that the oil to be used in compounding perfumes should always be the finest English drawn, and redistilled.

The crude oil, and also that known as oil of cloves stems, can be detected by the dark color, and by giving a "paon" blue color when shaken up with three times its volume of alcoholic solution of ferric perchloride, and also a deep violet if shaken up with some reduced metallic iron. Oil of pimento might be used instead of oil of cloves, and when the latter is given in a recipe, using half oil of cloves and half pimento, a very good blend is the result. I may also mention that I find an addition of two per cent of ammoniated alcohol to all the spice oils assists their volatilization.

HELIOTROPE.—This well-known perfume is not often prepared from the flowers of *Heliotropium peruvianum*, or from the British variety, as one would suppose, considering the powerful odor these flowers emit, a combination of vanilla and violet being the most common substitute.

JASMIN, obtained from the two species of Jasminum, *J. officinale* and *J. grandiflorum*, of the natural order of Jasminaceæ, which also supplies the Lilac (*Syringa*). The jasmin, or jessamine, is a small bush cultivated in the gardens and flower-farms of Grasse, to an extent greater than any other flower, although it is the most difficult to bring to perfection, being very sensitive to changes of temperature and soil. The perfume is greatly increased by the heat of the sun, and a rainy and dull summer between the months of June and October, when the shrub flowers, is as great a disaster to the Grasse perfumer as a wet harvest is to the English farmer. The essence obtained from jasmin is used as a basis for almost every compound scent, and I always form an idea of the status of the Grasse manufacturer by the quality of his jasmin pomade and essence, for, unless very carefully prepared, rancidity will quickly take place.

LAVENDER.—The Natural Order Labiate embraces several shrubs which yield very powerful volatile oils used for perfumery and flavoring, and also possessing medicinal properties in the forms of stimulants, carminatives, aromatics, etc. There are three distinct qualities of the oil; two distilled from *Lavandula vera*—Mitcham, or English, and French, principally from Les Alpes Maritimes; and that from *Lavandula Spica*, a very inferior sample, called "oil of spike." The first-named (the Mitcham) at the present time commands a very high price—about as many shillings an ounce as the French oil is worth per pound—and there is every prospect of still higher prices, as, year by year, when passing through Mitcham and the adjoining villages of Wallington, Carshalton, Beddington, Waddon, Cheam, and Sutton, I have noticed fields once under lavender and mint cultivation fallen prey to the ever-increasing inroad of the speculating builder. Ten years ago there were about 350 acres of lavender; now, I believe, there are not 150 acres. It is also grown at Market Deeping and a few other places, to what extent I am not prepared to say; and I should certainly consider it would pay any speculator to direct his attention to lavender cultivation.

In England the flowers are collected in July and August, when in full bloom, and are generally distilled with the stalks as gathered, the yield being about 20 oz. for every 100 lbs. Take this for granted, and an average crop of 800 lbs. per acre gives 160 oz., or 10 lbs. Now, suppose the increased cultivation should bring down the price of English oil to 100*s.* per lb.; this shows a value £50 an acre, and at the rate of 50 per cent for working expenses, stilling, rent, etc., I believe a very good return could be made. A friend of mine who some five years ago laid down about a quarter of an acre of garden ground, has been fully satisfied by the amount realized by the sale of the flowers, even from so small a plantation.

The exotic oil is obtained principally from the South of France, also from Northern Italy, Sicily, and Algeria. The department of Les Alpes Maritimes produces the finest samples. The highest hill-slopes grow the nearest approach to the Mitcham.

The different qualities exported by the Grasse manufacturers are almost as numerous as the letters of the alphabet, and are distinguished by such terms as essence de lavande cultivée, lavande du Piedmont, lavande des fleurs mondées, lavande éperle, lavande fine, lavande 1re qualité, 2me qualité, etc. In the neighborhood of Avignon I noticed some lavender growing, and was told the product was of rather inferior quality, the country being low and flat, and the soil poor. Mont Ventoux, in the same vicinity, which I traversed in my holiday tour, grows lavender of very fair quality; the altitude is about 4,000 feet above sea level.

Lavender oil is used in perfumery largely as lavender water, combined with orange and rose water, and in essences best combined with oil of cloves and benzoic acid.

Essence d'aspic is the distillate of the wild flowery plant *Lavandula Spica*, and is rarely found free from adulteration, a certain quantity of prepared turpentine being added in accordance with the price wished for. Camphor is also added to conceal this addition. Oil of spike is used in the arts and also in veterinary practice. It is not produced in Britain, the climate being too cold.

THYME.—Another plant of this Natural Order Labiatæ is *Thymus vulgaris*, which yields an oil used in perfumery. It is imported into this country from France; it grows also in the Western Peninsula, Lombardy, and the mountainous shores of the Adriatic and Greece, and is to be found in almost every English country garden for culinary purposes.

The distillation in Southern France is made from June to September, and the two samples of oil of thyme—red

* From the *Chemist and Druggist*.

and white—are obtained from the same plant, the redistilling keeping back the coloring matter, but at the same time destroying some of the aroma. I should recommend the red oil in preference to the white, and if the color (which is often intensified by alkanet) is not desired, animal charcoal will remove it very considerably.

ROSEMARY (*Rosmarinus officinalis*) may be now added as belonging to the same Natural Order, growing in the same localities and under similar circumstances. It is also grown in Britain, and a small quantity of oil is distilled, but, owing to the small amount used, quite a fancy price is the rule.

The last three oils, lavande d'aspic, thyme, and rosemary —are used mostly for soap-scenting, their terebinthinate odor excluding them from the category of the more delicate perfumes.

OIL OF PATCHOULI, from the plant *Pogostemon Patchouli*, which is grown in the Malayan Archipelago. The oil is much used in perfumery, though, owing to circumstances, not to such an extent as formerly. Chiefly used in conjunction with otto of rose. Owing to its lasting odor, a very small quantity only should be used in proportion to other ingredients.

LILY OF THE VALLEY (*Convallaria majalis*), with its pure white, bell-shaped, and delicately-scented flowers, is made into essence and pomade in the Grasse manufactories, and found of great use for perfume compounding. The plant flowers in early spring, February and March being the best month for manufacturing the essence.

DAFFODIL (*Narcissus pseudonarcissus*), Daffy-downdilly, which is found in almost every country in Europe, yields a pleasant perfume. It flowers in Grasse about April, and a little later in England. When once planted in a garden, the yield will soon be found greatly in excess of the wishes of the cultivator.

ESSENCE OF LEMON.—This oil, so largely used in flavoring, etc., is also employed in perfumery. Like oil of orange, it is very uncertain in its results, owing to changes in composition consequent on keeping for any length of time. Essence of lemon is prepared in the same manner as essence of bergamot, but there is a variety termed "essence de citron zeste," which is prepared by simply puncturing the oil-vessels and allowing the oil to run out, collecting it in a receiver and filtering. This is the best article for use in perfumery, as commercial essence of lemon is generally contaminated with very inferior distillates, or with rectified oil of turpentine, which can be detected by adding some liquor potassæ to a sample and applying hea..

OIL OF ORANGE (*Citrus vulgaris*, *Citrus Aurantium* and *Citrus Bigaradia*).—From the fruits are obtained the oils of bitter and sweet orange. This perfume is not very extensively used in perfumery in the shape of oil. The water obtained from the flowers, distilled during the month of May, is imported in large quantities from the South of France.

From the flowers is also obtained an essential oil, termed "oil of neroli." The best test to ascertain its purity is to shake up a small quantity with a saturated solution of sodium bisulphite, when a permanent crimson color will be produced. The sp. gr. is .890, and the oil is neutral to test-paper. There are two varieties of oil—essence de neroli bigarade, and essence de neroli Portugal.

Oil of petit grain is obtained from the leaves and shoots of the above-mentioned varieties, and called "essence de petit grain, bigarade or Portugal."

A mixture of oil of orange and oil of neroli with other essences makes a very good substitute for essence of ylang-ylang (a sample prepared from a formula by myself is on the table for your inspection). Oil of petit grain is used extensively in the manufacture of eau de Cologne.

MIGNONETTE (*Reseda odorata*) is well known, and is much esteemed for its fragrance. Flowering in March and April, it is then prepared for use in perfumery. The cold March winds sometimes spoil the crops for the season. Several imitations are in use, and are very similar to the genuine perfume.

PELARGONIUM ROSEUM.—Rose geranium is grown for perfumery in Provence, and there is an Algerian product known as "essence de geranium d'Afrique," inferior to that distilled at Grasse. This oil is used to adulterate otto of rose. Owing to the small yield—viz., 1 pound from 1,000 pounds—it is expensive, and its characteristic odor is greatly esteemed as an addendum to the numerous items in millefleur essence. Ol. geranii E. I. is not to be confounded with pelargonium, but is obtained from several species of the genus Andropogon, and termed "ginger grass oil."

ROSE.—First, the species *Rosa gallica*, cultivated in Southern Europe, Asia Minor, and Britain. The petals of this flower are obtained in their most perfect state for druggists' use from Mitcham. The quantity there obtained is very small, and Mitcham rose petals therefore command a high price; the same remark applies to all English-cultivated rose-leaves. The dried Continental leaves are often dyed with aniline, which may be detected by macerating in spirit to which are added a few drops of ammonia. The true state of the leaves can soon be seen.

Rosa Damascena.—From this is obtained the much-prized otto, or attar, of roses, which now rules at a high price. When first introduced into this country it was subject to duty about 10*s.* per ounce; this was gradually reduced, and in 1860 was taken off altogether.

Otto of roses is imported from Bulgaria and Turkey, principally from the southern side of the Balkan range—from Kizanlik and Philippopolis—and from Smyrna (Asia Minor). It is also made in India, in the Valley of the Ganges, but is never exported thence. There is also a little manufactured in France, but the quality will not bear comparison with Kizanlik. Otto is largely adulterated, as I mentioned previously, with oil of rose geranium (pelargonium), and also with oil of *Andropogon Schœnanthus*, a grass grown in India, which is exported to Turkey solely for the purpose of adulterating otto.

The best test for genuine otto is the degree at which it congeals, which should be 55° F., and the appearance of the mass. The crystals, or laminæ, should be shiny, feathery, and nearly transparent. When thick and milky, and more deposited at the bottom of the bottle than at the top, spermaceti is present, and perhaps paraffin-wax, which latter is hardly so readily detected as spermaceti.

Rose-water is also prepared from *Rosa damascena*, together with the essence and pomade, and imported from Grasse, Cannes, and Nimes.

TUBEREUSE.—Tuberose grows in the neighborhood of Grasse, and is a bulb which requires to be replanted each spring, not being of sufficient hardiness to withstand the winter. It blooms from July to October, and is not very extensively cultivated. Being a very delicate perfume, it is prepared by the cold "enfleurage process."

VIOLET (*Viola odorata*) is the most esteemed of all perfumes. It is cultivated over a large expanse of country, extending as far west as Avignon; in fact, wherever the olive is grown, being planted chiefly in olive orchards, which protect the plants from the cold winds, to which they are very susceptible. The flowers are gathered in February and March. The crop is often a failure, the result being a considerable increase in the price of the pomade and essence, in addition to bad quality.

VERBENA.—That variety which is used in perfumery is *Lippia citriodora*—lemon-grass plant—and is prepared at Travancore and Singapore, in the Straits Settlements. The oil should be redistilled before use in compounding.

AMBERGRIS.—A very useful adjunct to a toilet essence. When preparing essence of ambergris; macerate in hot water, to which is added the same quantity, by weight, of liquor potassæ as the ambergris; spirit to be added after a day or two, and maceration continued for two months before using.

MUSK.—The same remarks apply here. Always rub down the grain with sand or pumice-stone before using. The addition of one pint of any simple essence made from pomade—jasmin preferred—increases the permanence of musk. A few drops of acetic acid prevents the accumulation of ammoniacal aroma.

ORRIS.—Use only the finest Florentine; exhaust by maceration and percolation.

TONQUIN AND VANILLA should be both selected from good samples, and care should be taken to remove the fixed oil, which may be done by adding ½ pint of water to each gallon of the essences, when the oil will float on the surface. If not separated when compounded the essences will require a second filtration.

ACID BENZOIC.—This I have found a valuable addition to essences which are made from essential oils, and not from pomades. It is needless to add that only the English resublimed and that prepared from gum benzoin should be used.

The preparation of pomades and essences in the South of France has been so ably and minutely described in Piesse's "Art of Perfumery" that I cannot do better than advise my hearers to study the book themselves. I may add that the cold "enfleurage process," which is performed by strewing layers of flowers over thin layers of fat, the flowers being renewed daily until a good perfume is obtained, is more used than formerly, and it is the desire of manufacturers to export what are termed extra-saturated pomades in place of the well-known No. 24 strength.

METHYL CHLORIDE has been suggested as a good menstruum to exhaust flowers of their perfumes, and a manufactory on this principle was established at Cannes. I do not know if it has turned out a success. The chief difficulty at first was to have a pure methyl chloride, which was obtained by treating the ordinary methyl chloride with sulphuric acid, which absorbed the greater portion of the impurities. The extract has to be concentrated in vacuo—another source of difficulty—so I doubt if the old process of fat maceration can be beaten.

I subjoin a few formulæ for the manufacture of some of the best-known essences. I take for granted that the simple essences are ready at hand, and I should advise compounders—excepting those who make perfumes on a very large scale—to rely upon their wholesale friends to supply simple essences. The time, trouble, and loss in spirit which occur when making small quantities leave but little profit.

FORMULÆ.

Given essences of uniform strength, essential oils of finest quality, spirit best English grain, 56 o. p. (=89% of absol. alcohol by measure.

Ess. Bouquet.

Ext. jasmin	O. iv.
" violets	O. iv.
" rose	O. ij.
" orris	O. ij.
Ess. bergamot	v.
" citron zeste	i.
" musk	iv.
" vanilla	viij.
Otto of rose	ʒ iv.
Sp. vini rect	O. ij. or q. s.

Ess. Jockey Club.

Ext. jasmin	O. ij.
" tubereuse	O. ij.
" fleurs d'orange	O. iv.
" cassie	O. i.
" tonka	O. i.
Ol. santal. flav. ang	ij.
" neroli	ss.
Otto of rose, virgin	i.
Sp. vini rect	O. i. or q. s.

Ess. Patchouli.

Ol. patchouli	ʒ iij.
" santal flav. ang	ss.
Otto of rose	ʒ ij.
Ext. styrax	ij.
" civet	ʒ ij.
" orris	O. ss.
" jasmin	O. i.
Acid benzoic	ʒ i.
Sp. vini rect	O. viij.

Ess. Rondeletia.

Ext. orris	O. ss.
" jasmin	O. ss.
" musk	iv.
Ol. lavand. ang	ij.
" bergamot	ss.
" cloves	i.
" cedrat	ss.
Otto of rose	ʒ ij.
Sp. vini rect	O. iv.

Ess. Millefleurs.

Ext. jasmin	O. ij.
" rose	O. i.
" tuberose	O. i.
" fleurs d'orange	O. i.
" cassie	O. i.
" orris	O. i.
" vanilla	O. ss.
" acacia flowers	O. ss.
" musk	iv.
Ol. rose geranium	i.
" bergamot	i.
" lavand	ss.
" neroli	℥xx.
" thyme (rouge)	℥xx.
Sp. vini rect	O. ij. or q. s.

Ess. Frangipanni.

Ext. orris	O. iv.
" jasmin	O. ij.
" tuberose	O. ij.
" vanilla	O. i.
" styrax	O. ss.
" benzoin	O. ss.
Ol. patchouli	i.
" lavand. ang	ss.
" santal. flav	ss.
" red cedar wood	ss.
" pimento	℥xx.
" verbena	℥xx.
" neroli	℥xx.
" cinnamon ver	℥xx.
Sp. vini rect	O. i. or q. s.

Ess. White Rose.

Ext. tuberose	O. ij.
" rose	O. iv.
" jasmin	O. i.
" violet	O. i.
" orris	O. i.
Otto of rose, virgin	ij.
Ext. musk	vi.
Acid benzoic	ʒ i.
Sp. vini rect	O. i. or q. s.

In conclusion, let me say I found much information in Hanbury's "Pharmacographia," and I myself engaged in a holiday ramble in the Riviera, from Genoa westward as far as Marseilles, then inland through Avignon, a détour being made to Mont Ventoux. The whole distance even back to Paris, was performed on a bycicle, and the useful and interesting information I received from numerous flower-growers and manufacturers, who I found very ready to give every information, added very much to the enjoyment of my holiday, an example of spending one I should recommend to many athletic pharmacists, feeling sure the labor will not have been in vain.

A Good Infant Food.

DR. S. B. SHERRY, of Delafield, Wis., recommends the following formula for a substitute for human milk: Add a pint of barley-water (hot?) to an ounce of *pearl barley*; allow it to cool, and then strain it. Mix one-third of a pint of this barley-water with two-thirds of a pint of fresh, undiluted cow's milk, and sweeten with a teaspoonful of *milk-sugar.—Am. Journ. of Obstet.*

The Detection of Petroleum Oil and Spirit in Oil of Turpentine.

FROM an interesting paper* by Professor Henry E. Armstrong, Ph.D., F R.S., on "Turpentine; its Nature and Adulterations," we quote the following passages on the detection of petroleum oil and spirit in oil of turpentine:

The terms "petroleum spirit" and "petroleum oil," as commercially used, do not admit of very precise definition; for the purpose of this paper I would therefore define petroleum spirit as being that portion of crude petroleum which may be volatilized by means of steam from water boiling at atmospheric pressure, and petroleum oil as being the non-volatile portion. Judged of by this definition, commercial spirit and oil are, as a rule, more or less mixtures; the amount of spirit in the best burning oils is, however, small.

The presence of petroleum oil in turpentine is readily detected and the amount estimated by steam-distilling. Unless it has been freely exposed to the air for a long time, but a mere trace of viscid matter remains on steam-distilling turpentine; on one or two occasions only have I met with samples containing a small amount of rosin, which was left as a solid on distilling off the turpentine by a steam current. Should more than a few tenths of a per cent of non-volatile matter remain, it is probable that petroleum is present. This usually betrays itself by the more or less marked blue fluorescence of the residue; but should this criterion fail, the behavior of petroleum and of the non-volatile product of the air oxidation of turpentine on digestion with dilute nitric acid will serve to differentiate them. The latter is readily oxidized and dissolved; the former does not alter much in bulk, but apparently undergoes more or less complete nitration. I have never yet met with a sample containing rosin oil, but it would not be difficult to detect it, as it is oxidized by nitric acid and behaves in a most characteristic manner when triturated with a paste of slaked lime, forming the well-known grease.

The detection and estimation of petroleum spirit is less readily effected. The method which I employ is based on the different behavior of turpentine and paraffins with sulphuric acid. The paraffins, it is well known, are almost unaffected, whereas turpentine is polymerized and for the most part converted into substances of high boiling-point which do not volatilize in a current of steam. I say for the most part, because, as I have elsewhere stated, a certain amount of cymene and of a paraffinoid hydrocarbon is always produced. Inasmuch as the amount of cymene so produced varies with the strength of the acid and the temperature, being larger the more concentrated the acid and the higher the temperature, it is important always to work under uniform conditions, at as low a temperature as convenient, and to use diluted acid. I employ two strengths of acid, a mixture of two vols. acid and one vol. water (2 : 1 acid) and a mixture of four vols. acid and one vol. water (4 : 1 acid). The turpentine—500 *cc.* is a convenient quantity—is placed with about one-fourth to one-third of its bulk of 2 : 1 acid in a well-stoppered bottle, and the mixture is somewhat cautiously agitated. It soon becomes more or less heated, and as it is important to effect the polymerization at a temperature not much above the ordinary atmospheric temperature, the bottle is placed in cold water for a short time. After repeated agitation with the acid, the turpentine is converted into a viscid oil, and when this is the case and no more heat is developed on continued agitation, the contents of the bottle are transferred to a separating funnel, the acid layer is run off, and the oil poured into a flask; the latter having been connected with a condenser and a steam-pot—an ordinary tin can answers admirably—all that is volatile is distilled off. The distillate is mixed with about half its bulk of 4 : 1 acid, and treated in a precisely similar manner.

The product from this second operation should only consist of a mixture of cymene and the paraffinoid hydrocarbon; in bulk it should not be more than four to five per cent of the original hydrocarbon. This is the result of a very large number of estimations; as little as three per cent, however, has been obtained in experiments conducted with special care. If much more than about five per cent be obtained, it is desirable to repeat the treatment with 4 : 1 acid.

If from the result of this treatment it appears probable that petroleum spirit is present, the product is placed in a well-stoppered bottle, together with several times its volume of concentrated sulphuric acid, heated to 50° to 60°, with which it is violently agitated. This treatment is repeated if desirable (weak Nordhausen acid being with advantage substituted for the concentrated sulphuric acid), and the residual hydrocarbon is separated, steam-distilled, and then measured. The amount thus obtained should not exceed from one-half to one per cent of the original bulk of turpentine. This treatment with concentrated acid affords a check on the previous determination.

If American petroleum spirit be thus treated it suffers comparatively little loss, so that the amount of hydrocarbon above one per cent represents the *minimum* amount of petroleum spirit in the turpentine. The spirit from Scotch petroleum contains a very much higher proportion of hydrocarbons alterable by sulphuric acid, and therefore cannot be satisfactorily estimated.

To confirm the presence of petroleum spirit, the turpentine should be distilled. Petroleum spirit commences to distil at a temperature which may be above or below that at which turpentine boils, according to its quality, but always distils within comparatively wide limits of temperature; turpentine commences to boil near 160°, and almost entirely passes over below 180°.

The presence of rosin spirits also affects the boiling-point in a similar manner. Evidence of the presence of this adulterant is also afforded by the increased yield of hydrocarbons on treatment both with 4 : 1 and concentrated sulphuric acid, as rosin spirit also yields a cymene and paraffinoid hydrocarbon on treatment with 4 : 1 acid. The cymene from rosin spirit being isomeric with that from turpentine, proof of the presence of rosin spirit can be obtained by the detection of its cymene, but this is a somewhat delicate operation.

Addendum.—The method above described is also available for the analysis of solvent naphtha from coal-tar and similar products; it is, in fact, the only method which is capable of affording results which approach exactness. The problem is by no means so simple, however, as the coal-tar product itself contains, besides benzin and its homologues, basic bodies, hydrocarbons alterable by diluted sulphuric acid and paraffins. Until, therefore, a considerable number of genuine samples have been examined, the method is chiefly of value as a qualitative test.

* *Pharm. Journal and Trans.*, Jan. 30th, from *Journ. Chem. Ind.*

What is the Best Process for Purifying Petroleum Benzin for Pharmaceutical Uses, without Distillation?

BY FRED. GRAZER.

In accepting this query, as above stated, that is, to purify benzin without subjecting it to distillation, a more severe task was imposed than I expected. Every pharmacist is familiar with the disagreeable odor of commercial benzin, and most of them know how difficult it is to get rid of this, and it has been the object of many experiments. The impurities are mainly hydrocarbons of a higher or lower sp. gr., and these can only be separated by subjecting them to fractional distillation.

The following table will give an idea of the products derived from petroleum, coming over at the temperatures mentioned:

Rhigoline,	sp. g. 0.60 (90° B.)	goes over at	100° F.
Gasoline,	" " 0.63 (80° B.)	" " "	170° F.
Naphtha,	" " 0.67 (70° B.)	" " "	280° F.
Benzin,	" " 0.73 (60° B.)	" " "	300° F.
Kerosene	" " 0.78 (50° B.)	" " "	400° F.

above 400° F. mineral sperm and paraffin oils, with sp. gr. .72 to .85, are produced.

Benzin is the term applied to a mixture of various hydrocarbons having in general a sp. gr. of about .730, and a disagreeable odor; it is obtained as a by-product in the purification of petroleum. No doubt, the person who submitted the query supposed the impurity to reside mainly in the odor, and to purify it was simply to deodorize it. This, however, I think impossible without decomposition, it being to a certain extent the natural odor of this article. I have tried various processes for depriving the commercial article of its disagreeable odor, as well as for disguising it. My first trial was with wood charcoal, through which the benzin was allowed to percolate slowly, the charcoal being packed in a long narrow percolator constructed for this particular purpose.

The percolation was repeated several times, but the result was not satisfactory. Similar results were obtained with a solution of carbonate of soda, with carbonate of lead, animal charcoal, and others not worthy of mention. My next trial was with plumbate of potassium, which was made by diluting a solution of subacetate of lead with water, adding a portion of acetic acid, then a solution of potassium hydrate, in such quantity as to cause the lead to precipitate as hydrate; this was separated by filtration, and dissolved in an excess of solution of potassium hydrate by means of heat.

A portion of the benzin was repeatedly agitated with the solution of potassium plumbate thus obtained, set aside, decanted, and filtered through wood charcoal. By this process the benzin loses a portion of its disagreeable odor.

Another process which gave satisfactory results was the following: Two ounces of bichromate of potassium was dissolved in twelve ounces of water by means of a gentle heat, and set aside to cool. Three ounces of sulphuric acid was gradually added to five ounces of water with constant stirring, and, when cool, mixed with the solution of bichromate of potassium in a suitable vessel. A pint of benzin was added. They were briskly shaken together for some time, and set aside, the upper layer of benzin carefully decanted, and well shaken with a solution of potassa; after separating from this, it was finally washed with water. This process, I think, removes as much of the odor as any that I have yet tried. A very useful method for disguising the remaining odor, and imparting to it a more pleasant one, is simply to shake the product in a bottle with a portion of Cologne water, setting it aside for some time, say two or three weeks. It is then decanted, and the odor of the perfume will predominate.—*Proc. Cal. Pharm. Soc. and Coll. Pharm.*, 1883, 45.

On some new Coloring Matters for Wines and Liquors.

A LIQUID for coloring wines red has lately been manufactured and sold in France and elsewhere, under the name "*Teinte bordelaise.*" It is stated by the manufacturers to impart the proper purple tint (of Bordeaux), as well as mellowness, bouquet and the reaction of tannin. According to Carl Amthor, it is simply inspissated currant-juice containing about 4 per cent of alcohol.

Under the name "*Rouge végétal*" a red coloring matter for wines has lately been reintroduced. This may be recognized and distinguished from fuchsin in the following manner:

100 *cc.* of the suspected wine are freed from alcohol by distillation, the residue is strongly acidulated with sulphuric acid and then shaken with ether. The ethereal solution is then evaporated in a small capsule, in which a white woollen thread is placed. If "rouge végétal" was present, the thread assumes a brick-red color, which is colored transiently violet by ammonia, and afterwards assumes a dirty tint. If acetic ether is used, in place of ether, the thread becomes rose-red, which is changed to violet by ammonia.

Or, 100 *cc.* of the wine are shaken with amylic alcohol, which becomes red if fuchsin or "rouge végétal" are present. This red solution gives the following reactions:

In presence of *fuchsin*, the red solution becomes entirely colorless when warmed with ammonia; on the addition of acetic acid, the red color reappears.

In presence of "*rouge végétal*," addition of ammonia turns the red solution temporarily violet. By gently heating and shaking, the ammonia withdraws the color from the amylic alcohol, and assumes itself a dark-brown to dark fiery-red color. If acetic acid be now added, the color disappears almost entirely.

Under the name "*Substitute for Saffron*" ("Saffran Surrogat"), a yellow coal-tar color has been sold for a number of years, which is used for imparting a yellow color to liquors, confectionery, maccaroni, etc., and has always been considered innocuous. A mixture of this with indigo-carmine is used for coloring liquors *green*, and is sold under the name of "*Emerald-green*" (Smaragd-grün). A mixture with aniline red is sold as "*Substitute for Carmine*" ("Carmin-Surrogat"). The "*Substitute for Saffron*," which was first prepared and sold by Mittenzwei in Pölbitz near Zwickau (Saxony), is now generally prepared by converting cresol into cresol-sulphonic acid, and cautiously nitrifying the latter. The generated nitro-acid, after being washed, is then converted into a potassium salt. G. Heppe has examined a number of samples of this coloring matter and has found, that while the pure potassium salt of the acid is *explosive*, the commercial salt is *not* so, because it is mixed with a certain proportion of chloride of ammonium, up to 40 per cent, the presence of which makes it non-explosive.

This substitute for saffron may be adulterated with picric acid. This may be discovered by dissolving the coloring matter in water, separating the nitro-cresylic acid with hydrochloric or nitric acid, filtering through a moistened filter and testing the acid filtrate in the usual manner for picric acid. If the latter is present, the filtrate has a more or less deep greenish-yellow color and an intensely bitter taste. — From *Rep. der Anal. Chem.*, 1882, No. 24.

Simple Syrup-Filtering Apparatus.

M. GUENSKE, of Homburg, in the *Pharm. Zeitung*, suggests an arrangement for filtering syrups which, he says, leaves nothing to be desired. He takes an ordinary calcined magnesia bottle, fits its mouth with an India-rubber cork with a double bore, and, as shown in the engraving, fits a funnel in one of the bores and a glass tube through the other. On the upper end of the glass tube a second small glass tube is connected by an India-rubber tube. Round the lower part of the funnel a piece of wire netting is arranged to support the filter and to prevent it bursting at the point. Then, when the syrup is poured in, and the filter damped all round, the air is sucked from the bottle by the mouth as completely as possible through the tube, and the India-rubber tube pinched together. The sucking is repeated each time that the syrup is poured into the filter. M. Guenske says that by this method he can filter three kilograms of syrup in an afternoon.—*Chem. and Drugg.*

"The Medical Age" says: "We have a physician (?) right here in Detroit who avers that angina pectoris is an excellent remedy in consumption."

The New Tariff.

We give below extracts from the tariff which goes into operation on the 1st of July, which chiefly concern dealers in drugs and chemicals. In the first of the two columns will be found the rate of duty to be adopted, the second column giving, for comparison, the tariff rate to be abandoned.

	New Rates.	*Old Rates.*
Acid, acetic, acetous, or pyroligneous, s. g., 1.047	2c. per lb.	5c. per lb.
exceeding 1.047	10c. "	30c. "
boracic, commercial	4c. "	Free.
boracic, pure	5c. "	"
chromic	15% ad val.	15% ad val.
citric	10c. per lb.	10c. per lb.
tannic	$1 "	$2 "
Acids used for medicinal, chemical, or manufacturing purposes not specially enumerated or provided for	Free	10% ad val. and free.
Aconite	"	
Albumen	"	
Alcohol, amylic	10% ad val.	$2 per lb.
containing 94% anhydrous alcohol	$2 per gal.	
distilled, containing 50% anhydrous alcohol	$1 "	
Alcoholic compounds not otherwise specifically enumerated or provided for for the alcohol contained	$2 " 25% ad val.	
Alizarine, natural or artificial	Free.	
All barks, beans, berries, balsams, buds, bulbs, bulbous roots; excrescences, such as nut-galls, fruits, flowers, dried fibres, grains, gums, gum-resins, herbs, leaves, lichens, mosses, nuts, roots and stems, spices, vegetables, seeds (aromatic, not garden) and seeds of morbid growth, weeds, wood for dyeing, dried insects; any of the foregoing of which are not edible, but which have been advanced in value or condition by refining or grinding, or by any other process of manufacture not specially provided for	10% ad val.	Varying; 20 to 30%.
All preparations known as essential, expressed, distilled, or rendered oils, alkalies, alkaloids, and all combinations of any of the foregoing, and all chemical compounds and salts by whatever name known and not otherwise provided for	25% ad val.	Varying; 25 to 50%.
All preparations (not colors or dyes) not otherwise provided for	20% ad val.	20% ad val.
Alumina, alum, patent alum, alum substitute, sulphate of alumina, aluminous cake, and alum in crystals and ground	60c. per 100 lbs.	60c. per 100 lbs.
Aluminium	Free.	
Ambergris	"	
Ammonia, anhydrous	20% ad val.	20% ad val.
carbonate	20% "	20% "
muriate or salicylate	10% "	10% "
sulphate	20% "	20% "
water of	20% "	40% "
Aniline salts, or black salts, and black tares	Free.	
Annatto, ronco, or orleans, and all extracts of	"	
Antimony, regulus or melted	10% ad val.	10% ad val.
Argal, or argol, or crude tartar	Free.	
Arrowroot	"	30% "
Arseniate of aniline	"	
Arsenic	"	
sulphide of, or orpiment	"	
Asbestos, manufactured	25% ad val.	25% "
unmanufactured	Free.	
Asphaltum and bitumen, crude	"	25 and 20% ad val.
Ashes, wood, and lye of, and beet-root ashes	"	
Assafœtida	"	20%.
Balm of Gilead	Free.	
Barks, cinchona, or other barks used in the manufacture of quinia	"	
Baryta, carbonate or witherite	"	20% ad val.
Barytes, manufactured	¼c. per lb.	20% or ½c. per lb.
unmanufactured	10% ad val.	20% ad val.
Bauxite	Free.	
Bay-rum or bay-water, whether distilled or compounded	$1 per gal. for first proof, and in proportion for any greater st'ngth than first proof.	$1 per gal. for first proof, and in proportion for any greater st'ngth than first proof.
Benzine	20% ad val.	40c. per gal
Benzole	20% "	40c. "
Beeswax	20% "	20%.
Bismuth	Free.	
Blood, dried	"	
Bone-black and ivory drop black and bone char	25% ad val.	25% ad val. bone char free.
Bone-dust and bone-ash for manufacture of phosphate and fertilizers	Free.	
Bones, crude, not manufactured, burned, calcined, ground, or steamed	"	
Borate of lime	3c. per lb.	Free.
Borax, crude	3c. "	"
refined	5c. "	10c. per lb.
Bromine	Free.	
Cadmium	Free.	
Calamine	"	
Camphor, crude	"	
refined	5c. per lb.	5c. per lb.
Carbon, animal, fit for fertilizing only	Free.	
Carmine	10% ad val.	10%.
Cassia, cassia-buds, cassia vera, unground	Free	10, 20, and 10%.
Castor-beans or seeds	30c. per bu.	60c. per bu.
Castor or castoreum	Free.	
Cerium	"	
Chalk and cliff-stone, unmanufactured	"	
precipitated, French and red chalk, and all preparations not specifically enumerated	20% ad val.	20 or 25% ad val.

	New Rates.	*Old Rates.*
Charcoal	Free.	
Chloroform	50c. per lb.	$1 per lb.
Chromate and bichromate of potash	3c. per lb..	4c. "
Cinnamon, and chips of, unground	Free.....	20c. per lb.
Civet, crude	"	
Cloves and clove-stems, unground	"	5c. and 3c. per lb.
Coal-tar	20% ad val.	40c. per gal
Colors, not otherwise specified	35% "	50c. per lb.
Cobalt, as metallic arsenic	Free	20% ad val.
ore of	"	
oxide of	20% ad val.	20% "
Cochineal	Free.	
Cocoa, or cacao, crude, and fibre, leaves and shells of	"	
Cocculus indicus	"	
Colcothar, dry, or oxide of iron, but not including any article or substance in condition for or capable of use as a paint or painter's color	"	
Collodion, and all preparations of	50c. per lb.	$1 per lb.
roll or sheets	60c. per lb.	$1 "
when finished or partly finished articles.	60c. per lb., 25% ad val.	
Cologne water	$2 per gal., 50% ad val.	$3 per gal., 50% ad val
Colors, paints, lakes, dry or mixed with water or oil, not otherwise provided for	25% ad val.	Varying, aver. 25%.
Copper sulphate	3c. per lb..	4c. per lb.
Corks and cork-bark, manufactured	25% ad val.	30% ad val.
Cork-wood, or cork-bark, unmanufactured	Free.	
Cosmetics, pills, powders, troches, and all proprietary articles	50% ad val.	50% ad val.
Cream of tartar	6c. per lb..	10c. per lb.
Cryolite, or Kryolith	Free.	
Cudbear	"	
Cutch	"	
Cuttle-fish bone	"	
Dextrin and substitutes	1c. per lb..	10%.
Divi-divi	Free.	
Dragon's blood	"	
Drugs, beans, berries, balsams, buds, bulbs, and bulbous roots and excrescences, such as nutgalls, fruits, flowers, dried fibres, grains, gums and gum-resins, herbs, leaves, lichens, mosses, nuts, roots and stems, spices, vegetable seeds aromatic, garden seeds and seeds of morbid growth, weeds, woods used expressly for dyeing, and dried insects—any of the foregoing of which are not edible and are in a crude state, and not advanced in value or condition by refining or grinding, or by other process of manufacture, and not specially enumerated or provided for.	Free.	
Dyeing or tanning: Articles in a crude state used in dyeing or tanning, not specially enumerated or provided for	Free.	
Dye-woods, and extracts and decoctions of	10% ad val.	10% ad val.
Earths and clays, unwrought or unmanufactured, not specially provided for	$1.50 p. ton	
or clays, wrought or manufactured, not otherwise provided for	$3 per ton.	
Ergot	Free.	
Ether, œnanthic	$4 per oz..	$4 per oz.
spirit of nitrous	30c. per lb.	50c. per lb.
sulphuric	50c. "	$1 "
Ethers of all kinds, not otherwise provided for	$1 "	$1 "
Fish-glue, or isinglass	25% ad val.	Free.
Fish-rounds, or fish-bladders	Free.	
Fruit-ethers, oils, or essences	$2.50 p. lb.	$2.50 p. lb.
Gambier	Free.	
Gelatin and other similar preparations	30% ad val.	35%.
Ginger-ale	20% ad val., bott's free	
Ginger-root, unground	Free.	
Glucose, or grape-sugar	20% ad val.	20%.
Glue	20% "	20%.
Glycerine, crude, s.g. 1.25, or less at 60° F.	2c. per lb..	30%.
refined	5c. per lb..	30%.
Gold leaf	$1.50 p. 500 leaves.	$1.50 per pkge. of 500 leaves
Grease for use as soap-stock only, not specially enumerated or provided for	Free.	
not enumerated	10% ad val.	10% ad val.
Hemp-seed and rape-seed, and other oil-seeds of like character, other than linseed and flaxseed	¼c. per lb..	¼c. per lb.
Hoffman's anodyne	30c. "	50c. "
Indigo, extracts of, and carmine.	10% ad val.	10%.
and artificial indigo	Free.	
Iodine, crude	"	
resublimed	40c. per lb.	10c. per lb.
Iodoform	$2 per lb.	
Ipecac	Free.	
Iron, sulphate	3/10c. per lb.	⅛c. per lb.
Jalap	Free.	
Kieserite	"	20% ad val.
Kyanite, or cyanite, and kainite	"	
Lac, dye, crude, seed, button, stick, and shell	"	
spirits	"	
Lead, acetate of, brown	4c. per lb.	5c. per lb.
acetate of, white	6c. "	10c. "
ground in oil	3c. "	3c. "
nitrate of	3c. "	3c. "
red	3c. "	3c. "
white, dry, or in pulp	3c. "	3c. "
Leeches	Free.	
Licorice, paste or roll	7½c. per lb.	10c. "
juice	3c. "	5c. "
root, unground	Free.	
Lemon-juice and lime-juice	"	10%.
Linseed (no drawback allowed on cake from imported seed).	20c. per bu. of 56 lbs.	20c. per bu.
Lime, chloride of, or bleaching powder	Free.	

	New Rates.	Old Rates.
Lime, citrate of	Free.	
Litharge	3c. per lb.	25%.
Mace	Free	25c. per lb.
Madder, and munjeet, or Indian madder, ground and prepared, and extracts	"	
Magnesia, calcined	10c. per lb.	12c. "
carbonate	5c. "	6c. "
sulphate	½c. "	1c. "
Magnesium	Free.	
Magnesite, or native mineral carbonate of magnesia	"	6c. "
oxide and ore of	"	
Manna	"	
Marrow, crude	"	
Marsh-mallow	"	
Mineral waters, all not artificial, together with the bottles or jugs in which the same are imported	"	30% ad val. on bottles
Minerals, crude, not advanced in value or condition by refining or grinding, or by other process of manufacture, not specially enumerated or provided for	"	20% ad val.
Minerals, crude, non-dutiable, but which have been advanced in value or condition by manufacturing, not otherwise provided for	10% ad val.	20%.
Morphia, or morphine, and salts thereof	$1 per oz	$1 per oz.
Musk, crude, in natural pod	Free.	
Myrobalans	"	
Naphtha	20% ad val.	40c. per gal
Nickel, crude ore	15c. per lb. on the metal contain'd	
Nutmegs	Free.	20c. per lb.
Nux vomica	"	
Ochre and ochry earths ground in oil	1½c. per lb.	1½c. "
or ochry earths, umber, and sienna dry	½c. "	½c. "
Oil, almond	Free.	
amber, crude, and rectified	"	
ambergris	"	
aniline, crude	"	
anise, or anise seed	"	
aspic, or spike lavender	"	
bay leaves, or bay-rum essence or oil	$2.50 p. lb.	50c. per oz.
bergamot	Free.	
cajeput	"	
caraway	"	
cassia and cinnamon	"	
castor	80c. per g'l.	$1 per gal.
cedrat	Free.	
chamomile	"	
citronella or lemon-grass	"	
civet	"	
cognac	$4 per oz.	$4 per oz.
cottonseed (7½ lbs. to gal.)	25c. per gal	30c. per gal
croton	50c. per lb.	$1 per lb.
dead	20% ad val.	40c. per gal
fennel	Free.	
flaxseed or linseed (7½ lb. to gal.)	25c. per gal	30c. "
fusel	10% ad val.	$2 per lb.
hemp	10c. per gal	23c. per gal
jasmine or jesamine	Free.	
juglandium	"	

	New Rates.	Old Rates.
Oil, juniper	Free.	
lavender	"	
lemon	"	50c. per lb.
limes	"	
mace	"	
neroli, or orange-flower	"	50% ad val.
orange	"	50c. per lb.
or essence of rum	50c. per oz.	50c. per oz.
origanum	Free.	
palm and cocoanut	"	
poppy	"	
rapeseed	10c. per gal	23c. per gal
rosemary or anthos	Free.	
sesame or sesamum seed or bene	"	
spermaceti, whale, and other fish oils of American fisheries, and all other articles the produce of such fisheries	"	
thyme, or origanum, red or white	"	
valerian	"	
Opium, aqueous extract for medicinal use, and tincture of, as laudanum, and all other liquid preparations of opium not otherwise provided for	40% ad val.	40% ad val.
Opium, over 9% morphine	$1 per lb.	$1 per lb.
Opium, prepared for smoking and other preparations not enumerated	$10 "	$6 "
(But preparations for smoking and other preparations deposited in bonded warehouses shall not be removed therefrom for exportation without payment of duties, and such duties shall not be refunded.)		
Orange, mineral	3c. per lb.	25%.
or lemon-peel, unprepared	Free.	
Orchill, or orchill liquid	"	
Osmium	"	
Otto of roses	"	
Palladium	Free.	
Palm-nut kernels	"	
Paraffin	"	10c. per lb.
Pepper, unground, all kinds	"	5c. "
Perfumery, alcoholic	$2 per gal. and 50% ad val.	$3 per gal. and 50% ad val.
Phosphorus	10c. per lb.	20%.
Pimento, unground	Free	5c. per lb.
Pitch, Burgundy	"	
Plaster of Paris or sulphate of lime, unground	"	
Platina, unmanufactured	"	
Potash, carbonate	20% ad val.	20% ad val.
caustic	20% "	20% "
chlorate of	3c. per lb.	3c. per lb.
crude or fused	20% ad val.	1½c. "
iodide and iodate	50c. per lb.	75c. "
muriate of	Free	10c. "
nitrate of, refined	1½c. per lb.	2c. "
nitrate of, salpetre crude	1c. "	1c. "
prussiate of, red	10c. "	10c. "
prussiate of, yellow	5c. "	5c. "
sulphate	20% ad val.	20% ad val.
Preparations, essences, ethers, extracts, mixtures, spirits, tinctures, and medicated wines, of which alcohol is a component part, not enumerated	50c. per lb.	50% ad val.

	New Rates.	Old Rates.
Preparations, medicinal cerates, conserves, decoctions, emulsions, extracts, solid or fluid; infusions, juices, liniments, lozenges, mixtures, mucilages, ointments, oleoresins, suppositories, syrups, vinegars, and waters, of which alcohol is not a component part, etc....	25% ad val.	Varying; aver. 40%
Pumice and pumice-stone.....	Free.	
Quicksilver.....	10% ad val.	
Quinine, sulphate of, salts of, and cinchonidia.	Free.....	40% ad val. on cinchonidia.
Rotten-stone.....	Free.	
Safflower and extract of.....	Free.	
Saffron and saffron cake, and extract of.....	"	
Sago, sago crude, and flowers...	"	
Salep, or saloup.....	"	
Salicine	"	
Santonine.....	$3 per lb ..	$3 per lb.
Sealing wax	20% ad val.	
Soap, fancy and perfumed, and toilet soaps.....	15c. per lb.	10c. per lb. and 25%.
hard and soft, and all not otherwise provided for, and Castile soap	20% ad val.	10c. per lb. and 30%.
stock.....	Free.	
Soda and potassa tartrate, or Rochelle salt.....	3c. per lb.	5c. per lb.
ash.....	¼c. "	¼c. "
bicarbonate and super-carbonate, and saleratus, calcined, or pearl ash...	1½c. "	1½c. "
hydrate or caustic.....	1c. "	1½c. "
nitrate of, or cubic nitrate.	Free.	
sal	¼c. per lb.	¼c. "
silicate, or other alkaline silicate.....	1½c. "	½c. "
sulphate, salt cake, crude and refined, nitre... ..	20% ad val.	1½c. "
sulphate, and Glauber salt.	20% ad val.	1½c. "
Sodium	Free.....	20% ad val.
Spices, ground and powdered, not otherwise provided for....	5% ad val.	30c. per lb.
Sponges.....	20% "	20%.
Storax, or styrax	Free.	
Strontia, oxide of, and protoxide of strontium, and strontianite, or mineral carbonate of strontia.....	"	
Strychnine	50c. per oz.	$1 per oz.
salts of.....	50c. "	$1.50 p. oz.
Sugar of milk.....	Free.	
Sulphur, lac or precipitated....	"	
or brimstone, not especially enumerated.....	"	
Sulphur, refined...	$10 per ton.	$10 per ton.
sublimed.....	$20 "	$20 " and 15% ad val.
Sumac, extract.....	20% ad val.	10% ad val.
ground.....	3/10c. per lb.	10%.
Tannin...	$1 per lb. .	$1 per lb.
Tapioca, cassava, or cassada....	Free.	
Tar, coal.....	10% ad val.	20% ad val.
wood	10% "	20% "
Tartars, partly refined, including less crystals.....	4c. per lb.	6c. per lb.
Terra alba, aluminous.	Free.	
japonica.....	"	
Tonquin, Tonqua, or Tonka beans.....	"	
Tripoli	"	
Turmeric.....	"	
Turpentine spirit.....	20c. per gal.	30c. per gal
Venice.....	Free.	
Ultramarine.....	5c. per lb.	6c. per lb.
Uranium, oxide of.....	Free.	
Vaccine virus.....	Free.	
Valonia.....	"	
Varnishes of all kinds..... . .	40% ad val., and $1 . 32 per gal additional for the alcohol.	50c. p. gal., and 20% or 50 and 25.
Verdigris, or subacetate of copper	Free.	
Waters, mineral, imitations of and wholly artificial.....	30% ad val.	30% ad val.
Waters, mineral (see also mineral waters)...	Free.	
Wax, vegetable and mineral....	"	
Whiting, and Paris white, dry...	½c. per lb..	1c. per lb.
Zaffer.....	Free.	
Zinc, oxide, dry.....	1¾c. per lb.	1¾c. per lb.
oxide, ground in oil.....	1¾c. "	1¾c. "

Estimation of Sulphuric Acid in Presence of Alkaline Chlorides.

BY B. SCHULZE.

THE influence of nitrates on the precipitation of barium sulphate has already been studied by Fresenius, and he recommends warming the ignited precipitate with hydrochloric acid and washing with hot water. After filtration, the filtrate is evaporated to dryness to separate dissolved barium sulphate, the latter added to the rest of the precipitate, and the whole weighed, By this means the nitrates are removed; but he does not enter into the question as to whether chlorides are also to be found in the precipitate. In the estimation of sulphur in organic substances by fusion with potash and salpetre, excess of alkaline salts is always present; when they are in the form of nitrates, the precipitated barium sulphate will have to be purified by the above method. The author, however, prefers to convert the nitrates into chlorides by heating to dryness with hydrochloric acid. Upon re-dissolving and filtering, the sulphuric acid is precipitated by a little barium chloride, and the precipitate, after filtration, ignited alone, and finally with sulphuric acid, and weighed in the usual manner. A precipitate obtained this way was treated with a few drops of hydrochloric acid, and then with boiling water, and filtered. The filtrate showed quite a strong sulphuric acid reaction with barium chloride, which could only have arisen from the presence of alkaline sulphates in the precipitate, and was of course due originally to the coprecipitation of alkaline chlorides. In general, about three per cent of the original precipitate was removed in this manner. To ascertain whether barium sulphate was also removed in any quantity by this process, so as to necessitate the evaporation of the wash-water, as in Fresenius' method, further portions were treated two or three times with hydrochloric acid, and the change of weight in each case noted. The loss by the second and third treatment was, however, found to be so small that it could be neglected, but one treatment with acid seems to be essential in all cases where excess of alkaline chlorides is present.—*Landw. Versuchs-Stat.*, 28, 161.

NOTES, QUERIES AND ANSWERS.

Under this heading we shall, to the best of our ability, endeavor to answer such questions addressed to us, as come within the scope of this journal, provided they are accompanied by the name and address of the writer. Answers to queries received after the 5th of the month will lie over until the next issue. Unless special instructions to the contrary accompany the query, the initials of the correspondent will be quoted at the head of each answer.

When asking for the formula of an unusual, patented, or proprietary compound, always accompany the query with any information you may already possess regarding the locality in which it is used, its use and reputed effects, in order to enable us to make inquiry without waste of time and labor. When it can conveniently be done, send also a specimen of the label used on packages of the compound.

No. 1069.—**Smelling Salts** ("Practical").

Among the many formulæ for Smelling Salts, the following are much used, and will furnish a satisfactory article: "Inexhaustible Smelling Salts" (so-called) is thus prepared:

Water of ammonia	1 pint.
Oil of rosemary	1 drachm.
" " lavender	1 "
" " bergamot	½ "
" " cloves	½ "

Mix the whole together with agitation in a very strong and well-stoppered bottle.

This mixture is used by filling the smelling-bottles with any porous absorbent material, such as asbestos, or, what is better, sponge cuttings that have been well beaten, washed, and dried. After the bottles are filled with the sponge, it is thoroughly saturated with the scented ammonia, but no more is poured in than the sponge will retain when the bottles are inverted; as, if by any chance the ammonia runs out, and is spilt over certain colored fabrics, it causes a stain.

For transparent colored bottles, instead of sponge, the perumers use what they call "insoluble crystal salts" (sulphate of potassium). The bottles being filled with crystals, are covered either with the liquid ammonia, scented as above, or with spirit of ammonia (alcohol saturated with ammoniacal gas). The necks of the bottles are filled with a piece of white cotton; otherwise, when inverted, from the non-absorbent quality of the crystals, the ammonia runs out, and causes complaints to be made. The crystals are prettier in colored bottles than the sponge; but in plain bottles the sponge appears quite as handsome, and, as before observed, it holds the ammonia better than any other material. Perfumers sell also what is called *White Smelling Salts* and *Preston Salts*. The White Smelling Salt is the "sesqui-carbonate of ammonia" in powder, with which is mixed any perfuming oil that is thought fit—oil of lavender giving, as a general rule, the most satisfaction.

The contents of a bottle so filled soon lose their pungency, and a nearly inodorous residue remains. This objection is partly removed by following Mr. Allchin's plan, the first step of which is to convert the "sesqui-carbonate" into the "mono-carbonate of ammonia," which is accomplished in the following way: Forty ounces of sesqui-carbonate of ammonia [we leave the original nomenclature unaltered.—ED. N. R.] are broken into fragments, about the size of filberts, and placed in a jar having a well-fitting lid. Into this is afterwards poured twenty ounces of stronger water of ammonia.* This mixture is frequently stirred for a week, and the jar is then set aside in a cool place for three or four more weeks. If the mixture is not stirred for the first week, it sets as hard as a stone; after stirring, however, it becomes solid and dry, but can be easily removed from the jar. It is now reduced to a roughish powder, something like granular carbonate of potassium, and in that state it is ready for filling the bottles, and some volatile essence, or strong ammonia perfumed with essential oils is added. The volatile essence Mr. Allchin uses and recommends as follows:

English oil of lavender,	
Tincture of musk, of each	4 drachms.
Oil of bergamot	2 "
" " cloves	1 drachm.
" " rose	15 drops.
" " cinnamon	5 "
Stronger water of ammonia	1 pint.

No. 1070.—**Civet Fat** (E. A.).

The odor of civet as well as of musk appears to have a strong attraction for game. In some countries, hunters, who are aware of this fact, use a fat or grease, which they apply to trees or other objects to which they desire to draw game. We doubt very much whether any true "civet fat" (supposed to be an adipose secretion on the intestines of the civet cat) has ever been seen in the market. Civet itself, however, is of a fatty nature, and has been used as "civet fat" by huntsmen. As it is, however, somewhat expensive, an artificial "civet fat" is prepared in many places, which has about the following composition:

Fixed oil of nutmeg	50 parts.
Spermaceti	15 "
Olive oil	10 "
Balsam Peru	5 "
Carbonate of ammonium	2 "
Musk	1 part.
Oil of cloves	1 "
" " cinnamon	1 "
" " sassafras	1 "

Melt the first four ingredients at a gentle heat, and add, while stirring, the carbonate of ammonium and musk previously well triturated together. Finally, add the oils, digest the mixture for an hour in a stoppered flask, and strain.

Hager, who gives the above formula, says that it is preferable to use 25 parts of vaseline, in place of the spermaceti and olive oil.

No. 1071.—**Blue Print Solution** (W. F. R.).

You will find a full answer to your query in the September number of this journal, for 1882. The formula there given for making *blue copies* from drawings, writing or printed matter, if carefully followed, works satisfactorily, as we have reason to know.

No. 1072.—**Muencke's Gas Burner** (J. P. P.).

The questions you sent us, some time ago, in reference to these burners, cannot be answered by us. We advise you to correspond with the manufacturer, whose address we gave in our last number (p. 124).

No. 1073.—**Preserving Ginger Beer** (C.).

If you desire to preserve this *in bulk*, you may do so by keeping it in casks with a thin layer of olive, cotton-seed or or other bland oil poured on top.

The addition of about 5 grains of salicylic acid to the quart of finished liquid will also help to preserve it. But it should not be exposed to air.

No. 1074.—**Emulsion of Cod-Liver Oil** (J. V. J.).

You will find the desired formula on pp. 110 and 138 of our volume for 1882.

By the way, we would say that the briefest method of finding an article in our past volumes is to consult the *index*. This will save you and us much valuable time.

No. 1075.—**Pyroleine—A Correction.**

On page 3 of our January number we printed an article on "Pyroleine," which we translated from the *Revista Farmaceutico*, of Buenos Ayres (1882, Nos. 17–20). As author is there named "Dr. Don Jaime Arbós y Tor,

*The original has: Liquor ammoniæ, sp. gr. 0.880; but it is impossible to obtain such highly concentrated water at the usual temperature. The stronger water of ammonia (spec. grav. 0.900) will answer well enough.

Professor of Physics and Chemistry in Buenos Ayres." This is a mistake; it should have read "in Barcelona." The investigations of Dr. Arbós were carried on in the laboratory of "*El Sentido Catolico en las Ciencias Médicas*," and were published in the review bearing the same name, as we are notified by the publishers. We also learn, with regret, that Dr. Arbós has since died.

No. 1076.—**Rhamnus Purshiana** (F. H.).

This correspondent wants a formula for administering this drug so that the "horrid bitterness" of it would be fairly well covered.

We think that a simple combination with Elixir Aurantii will help to disguise the bitterness sufficiently well. Or you might use the following formula for *Elixir Rhamni Purshianæ*:

Extr. rhamni pursh. fl.	fl. oz. 2
Glycyrrhizini ammon.	dr. 2.
Glycerini	fl. oz. 2
Elixir aurantii.	q. s. ad fl. oz. 16

The bitter taste will thus be very considerably masked. We know of no method to hide it completely.

No. 1077.—**Calx Sulphurata and Sulphide of Calcium** (J. H. T.).

A peculiar product obtained by calcining about seven parts of finely-powdered gypsum and one part of powdered charcoal in a covered crucible has long been used in medicine, and has been officinal in various pharmacopæias. The proportion of gypsum and charcoal vary in the latter between eight and three of the former to one of the latter. Soubeiran advises to mix eight of gypsum, four of lampblack and enough of a fatty oil to make a mass. Other formulæ prescribe caustic lime and sulphur. The homœopaths prepare it by heating equal parts of finely-powdered oyster-shells and flowers of sulphur for ten minutes to a white heat. One of the old names of this preparation is *Hepar Sulphuris Calcareum*, and this is the name it is known by in homœopathic practice. None of the above processes yield a pure sulphide of calcium (CaS), the product being always contaminated with other substances, either undecomposed gypsum or carbonate of calcium, or free lime or free carbon. A *pure* sulphide of calcium can be prepared only with some difficulty.

It is not at all necessary that the "sulphide of calcium" used in medicine shall be absolutely pure. All previous reports of the therapeutic effects of the compound are based on the commercial article—chiefly on that made from oyster-shells and sulphur—and the quality of this, though it only consists in part of CaS, has remained tolerably uniform.

The pharmacopœeia only wished to recognize the article already in use, and knowing that the ordinary name by which it was known in practice and in trade, viz., sulphide of calcium, was wrong, inasmuch as the preparation contained only about thirty-three per cent of the pure sulphide, the revisers selected the more correct old name, which expresses only the fact that the compound is prepared from *lime* and contains *sulphur*, "Calx Sulphurata"=sulphurated lime. A test was, however, appended to estimate the amount of pure calcium sulphide present, and the lowest limit of percentage was placed at thirty-six.

Perfectly pure sulphide of calcium, if ever introduced into medicine, will have to receive the title "Calcii Sulphidum" in the pharmacopœia.

Whether you prescribe calx sulphurata or calcii sulphidum, you will always receive the same substance. It is never "mixed" artificially, the admixtures being inevitable in process of preparation. A fair estimate of the good quality of a sample may be obtained from the odor of the substance, which should be that of a sulphydric acid and should be quite distinct. As a rule we have obtained a better article in this country from homœopathic manufacturers than from any other source. This is probably owing, at least partly, to the fact that they prepare it more frequently than others, and are thereby enabled to dispense it in a much fresher state.

No. 1078.—**Quinoline and Iodoform** (M. J.).

We are not aware that these two substances would be therapeutically antagonistic. Their respective properties are so distinct that we cannot conceive a case at present where it would be necessary or advisable to administer both substances at the same time. If either of them is to be used, we advise you to administer them separately.

We have lately seen an article by P. Rhoussopoulos in the *Berichte der Deutsch. Cem. Ges.* (1883, 202), in which the author reports that quinoline and iodoform enter into a definite chemical combination. One molecule of iodoform is dissolved in ether and mixed with three molecules of quinoline likewise dissolved in ether. In about one hour the mixture separates large, handsome, colorless, and transrent needles, which may be dried by pressing between blotting paper, and may be obtained pure by being recrystallized from ether. The compound is soluble in ether, benzol, acetic ether, ligroin (low-boiling petroleum naphtha), etc. From the last-named three solvents it crystallizes in thin and pointed, from the former in thick needles. If treated with alcohol it splits into the original substances, quinoline and iodoform. It is insoluble in cold water, acids, or alkalies; on warming, it splits up. When shaken with chloride of silver, it does not part with its iodine. Its composition is $CH(C_9H_7NI)_3$ (= iodoform CHI_3 + quinoline C_9H_7N); the author calls it methan-trichinoil-iodhydrate. We know nothing of its therapeutic properties.

No. 1079.—**Cement for Leather** (O. S.).

When pieces of leather are to be cemented together, which are not subjected to traction or need not sustain heavy weights, common glue will probably be the best binding substance; for thin leather, ordinary flour-paste may also be used.

If the leather is subjected to a moderate strain, the following method may be used: Soak equal parts of glue and of isinglass for ten hours with enough water to cover them, then add about one-fourth part of tannin, and boil until the mixture becomes sticky. The surfaces of the leather must first be roughened with some coarse tool; they are then well rubbed with the above mixture, while warm, and firmly pressed together. After a few hours they will be found united.

Or glue (8 parts) may be soaked with water, until soft, the excess poured off, and the vessel then placed on a water-bath until the glue melts. One part of glacial acetic acid is then added, and the mixture transferred to small vials. This liquid glue will also stick leather together very firmly.

An Austrian firm manufactures a glue which is said to be made from the entrails (skins ?) of cattle, which goes by the name of dermatin, and is reported to be used in England as well as on the Continent. This is said to glue leather together so effectually that the mended place will be as good as new, while it leaves it perfectly flexible.

No. 1080.—**U. S. Process for Liquor Potassæ and Liquor Sodæ** (J. F. R.).

The former U. S Pharm. directed that the solution, after being mixed and boiled with the milk of lime, should be strained, and that the residue on the strainer should then be washed with distilled water until the proper volume of product was obtained. This proceeding introduced several disadvantageous features. In the first place, the form of strainer and the method of washing the residue will often differ, and hence the water used in washing until the proper volume is obtained will take up varying amounts of the potassa still retained in the precipitate, according to the care and skill in manipulation. And secondly, the prolonged exposure and the unavoidable introduction of air during the process of washing will cause a considerable amount of carbonic acid gas to be absorbed by the solution.

In the new process, the total weight is made up with distilled water while the residue is still mixed with the liquid. This takes only a few minutes, and is not likely to introduce a personal error. The product is then strained through linen, into a bottle of such a capacity as

nearly to fill it, and allowed to settle. Finally, the clear liquid is siphoned off. There will be a small loss in this case, owing to the residue in the bottle retaining some of the solution. But this need not be lost. It may be washed out and used for common purposes, cleaning bottles, etc., or the washings may be utilized in operations where acids are to be saturated with potassa.

The leading idea of eliminating personal errors by completing the total weight of the product before the liquid portion is separated from the solid residue will also be found carried out in the process for liquor sodæ and that for liquor plumbi subcarbonatis.

No. 1081.—**Kefir** (A. J.).

From the *Deutsche Medicinal Zeitung* we learn that this is a thick, white fluid of an acidulous, somewhat vinous taste, which is used in the neighborhood of the mountains Elborus and Kasbec in the Caucasus as an article of diet. It has the same properties as kumys. It is prepared by pouring milk into a sack made of goat-skin, adding a peculiar ferment (some pieces of the size of a walnut, of a white, rather dense mass, consisting of a yeast which contains the bacteria known as Dispora Caucasica), and allowing to ferment for a period varying from one to three days, according to the kind of product desired. The ferment itself is the secret of the preparation; whenever it will be accessible in commerce, it will be possible to prepare the "kefir" elsewhere.

No. 1082.—**Concentrated Tinctures** (Springfield).

Theoretically, there would be no objection to prepare tinctures from the corresponding fluid extracts, since it is argued that the latter fully represent the medicinal properties of the drug, or that they contain all its useful constituents. In the majority of cases, it is also true in practice that the tinctures prepared in proper proportion from the corresponding fluid extracts (provided the latter are properly prepared) fully represent the drug. This is particularly the case with those drugs which are easily exhausted by simple menstrua, and where the menstruum for the fluid extract and the tincture is the same or nearly so. But in other cases, as for instance cinchona, rhubarb, etc., the menstruum for the fluid extract is specially devised for the purpose to keep in solution the excessive amount of soluble material, while the menstruum selected for the tincture is more simple, because the larger bulk of the solvent permits the soluble matters to be retained without special precautions. Tinctures of this kind, made from the fresh drug with the prescribed menstruum, not only have a different appearance, but also a different taste from those made from the fluid extracts. Since it should be the aim of all pharmacists to aim at uniformity in their preparations—because the uninformed public is apt to suspect the quality of preparations obtained at different pharmacies and differing in *appearance*—it cannot be too strongly urged to avoid the slip-shod method of using fluid extracts *promiscuously* as the basis of tinctures. A great deal more might be said on this subject; yet, it may even be shown that in many cases the constituents of a tincture prepared by dilution from a fluid extract differ from those contained in one regularly percolated (on account of the difference in the concentration of the successive portions of menstruum); but the above briefly expresses our views, and will for the present suffice.

We will, however, append a practical note which may be of benefit to many of our readers. Certain tinctures, as for instance that of Aloes, Benzoin, Tolu, etc., may be kept in stock in a *concentrated* state, and be diluted when wanted. Such concentrated tinctures are best prepared with the aid of a gentle heat, under an upright condenser, to prevent loss of alcohol. When the menstruum has taken up all it can, the solution is allowed to cool and settle, the clear liquid removed, and the residue again digested until it is exhausted. In many establishments, there are sources of waste heat or steam which may be utilized economically for such purposes. When the drug is exhausted, the clear solution is distilled, so as to recover the excess of alcohol (by means of the same condenser, reversed), until the residue bears a definite relation to the drug. For instance, we keep on hand, constantly, a considerable amount of "Liquid Aloes," "Liquid Benzoin," "Liquid Tolu," "Liquid Myrrh," to make the tinctures or any other preparation by simple dilution. Our "Liquid Tolu," for instance, is a beautiful, transparent liquid of the consistence of honey, and of such a concentration that 15 parts will make 100 parts of tincture. The preparation of tinctures from such concentrations is perfectly legitimate, saves time and trouble, and furnishes probably a better product in most cases, than simple percolation of the drug, because the previous treatment of the latter with the aid of heat has resulted in its *complete* exhaustion.

No. 1083.—**U. S. Pharm. Formula for Suppositories** (O. F. F.).

This correspondent inquires wether the new pharmacopœia has not made a mistake in ordering suppositories to be made of the weight of *fifteen* grains, instead of *thirty* grains as in the preceding pharmacopœia.

In reply we would say that the change was made advisedly. The tendency of prescribing physicians has, during the last few years, been more towards the use of small suppositories. The British pharmacopœia directs suppositories to weigh fifteen grains, in accordance with the recommendations of Mr. H. B. Brady published in 1866, 1868, and 1871. For general use these are quite large enough, particularly if the medicinal ingredient is in a concentrated form. The introduction of a large suppository does not always insure the complete absorption of the active constituents, since the whole action is confined to a small surface of the mucous membrane, and the comparatively rapid melting of the external layer of the suppository sometimes causes the inner core to be discharged. A small suppository repeated at lesser intervals, or several suppositories introduced one after another, insures a more effective absorption.

No. 1084.—**Adeps Benzoinatus** (O. F. F.).

Although benzoinated lard, or ointment of benzoin (as the pharmacopœia of 1870 called it), when made by the new officinal process—which consists in digesting the lard with coarsely powdered benzoin, in a well-covered vessel—does not possess such a strong odor of benzoin as is produced by adding tincture of benzoin to the lard, yet the object of the process is just as fully attained. The constituent which is to combine with the lard is the benzoic acid, which acts as a preservative and prevents the lard from getting rancid. The other odorous principle of benzoin is not so readily taken up by the lard, although a prolonged digestion will extract this also. The former process was abandoned because experience has shown that some of the resinous constituents introduced by adding the tincture, made the resulting ointment irritating to the skin, particularly in certain diseases of the latter.

No. 1085—**Tinctura Opii** (Same).

The error in the officinal directions has been pointed out several times already by most pharmaceutical and medical journals. The original draft of the formula was:

Opium	*one part*	1
Alcohol	*four parts*	4
Water	*four parts*	4
Diluted Alcohol	*q. s.*	
To make	*ten parts*	10

When the quantities were multiplied, in the preparation of the final manuscript, so as to make 100 parts, the alcohol and water were accidentally overlooked. In the end, this makes no difference, since the menstruum remains the same throughout the process. The 4 parts of alcohol and water, are, of course, completely soaked up by the opium, so that no liquid will pass until the diluted alcohol is poured on top. The copies of the pharmacopœia which will be issued hereafter will have the error corrected.

No. 1086—**Calomel and Iodide of Potassium** (Dr. J. W. P.).

All mercurous salts are incompatible with soluble iodides,

the result being that one half of the mercury separates in the metallic state, while the other half combines with iodine to form the biniodide. If enough of the soluble iodide (as iodide of sodium, potassium, etc.) be present, the mercuric iodide will remain in solution and only the gray metallic mercury will be deposited. The reaction takes place thus:

$$Hg_2Cl_2 + 2KI = HgI_2 + 2KCl + Hg$$

mercurous chloride (calomel) — potassium iodide — mercuric iodide (biniodide) — potassium chloride — mercury.

Care must, therefore, be taken that calomel or mercurous iodide (green iodide of mercury) be never administered at the same time with iodide of potassium or other soluble iodides.

This decomposition occurs even if calomel be applied to mucous membranes, while the iodide is given internally. For instance, the external application of calomel to the conjunctiva has, under such circumstances, produced serious inflammation.

No. 1087.—**Blackboard-Paint or Varnish** (Instructor).

A good black-board should not only have a deep black surface, without gloss, but should also have a fine grain so as to readily take the marks made upon it by chalk.

Among the more recent methods for producing such a surface, the following may be quoted:

Dissolve 9 oz. of shellac and 2¼ oz. of sandarac in ½ gallon of alcohol, at a gentle heat; and also 1 oz. of guttapercha in 5½ fl. oz. of oil of turpentine. Mix both solutions together, then add 1 lb. of finely powdered emery and 1½ oz. of lampblack. Put a thick coat of this paint on the wood, then place the black-board in a horizontal position and set fire to the paint at the lower edge. When the alcohol has been burned off, extinguish the flame and afterwards apply a fresh coat. Wen dry, paint again four or five times, but without igniting the alcohol. If any of the first coats show uneven spots or blisters, they may be removed by careful sand-papering.

No. 1088.—**Liebreich's Butyl or Croton Chloral Mixture** (Richmond).

Prof. Liebreich, who introduced butyl-chloral—less correctly, but more commonly named croton-chloral—into medical practice as a remedy in neuralgia of the fifth pair of nerves and in the headache which affects anæmic women, prefers the following formula for its administration:

Butyl-Chloral (Croton-Chloral)	5 to 10 parts
Glycerin	20 "
Distilled water	130 "

In case of pain or sleepnessness, when going to bed, the patient is to take a teaspoonful from 5 to 5 minutes, until *one-half* or *one-third* of the mixture has been consumed.

Formulæ Wanted.

CORRESPONDENTS desire to learn the composition of the following:

Green's August Flowers.

Hostetter's Stomach Bitters (one of our correspondents, who wishes the formula for this, adds that "it is said to contain 50 per cent of whiskey, some gentian, cardamom, etc., etc.").

Woolley's Opium Antidote.

QUERIES FROM EXCHANGES.

"THE DRUGGIST."

Grinding Arnica Flowers, an operation attended with some difficulty, may be rendered unnecessary, if, instead, they are rubbed through a coarse sieve.

Iodide of Zinc may be made by taking of

Iodine	127 grains.
Granulated zinc	33 "
Distilled water	q. s.

Place the iodine and four drachms of water into a small flask, and gradually add the zinc. If necessary, assist the action with gentle heat. Toward the end, raise the temperature, and if, after the complete disappearance of the metal, there remains any yellow color, add a few grains more of the metal, and continue the heat until the solution is colorless. Filter when cold, and add enough water to make the whole measure eleven fluid drachms.

The Volatile Products of Petroleum.—Much confusion exists in the nomenclature of these substances among manufacturers, but the following classification is probably the most generally accepted. These fluids are all obtained by the fractional distillation of crude petroleum, their specific gravity being the only practicable test for their distinction:

Petroleum Ether, Petroleum Naphtha, Rhigolin.—This is the lightest of the series of petroleum distillates, it passing over at a temperature between 45° and 60° C. Its spec. grav. is 0.660–0.665. It is also sometimes known as Sherwood oil, canadol, or keroselin ether. This is occasionally employed as a substiture for the ether spray to produce local anæsthesia.

Gasolin or Keroselin distils at 60°–70° C., and has a spec. grav. of 0.665–0.680. This is the fluid sold for the gasolin lamps and stoves, while, as a rule, this is also meant by people calling for naphtha. It may here be interposed that "naphtha" is of Chaldaic origin, and really designates a bituminous substance found in the Orient akin to crude petroleum. But as now applied, the term may also refer to ether on the one hand, and acetone, wood naphtha, on the other.

Benzin distils at between 70°–120° C., and has a spec. grav. of 0.685–0.710. This in pharmacy and chemistry should invariably be designated as petroleum benzin, to distinguish it from coal-tar benzin, until such time as "benzol" shall have been universally adopted for the latter. Much annoyance has been created by this inexcusable confusion introduced into chemical nomenclature. Some jobbers call this benzin deodorized naphtha.

Light petroleum, used in the arts, is obtained at 120°–150° C., and has a spec. grav. of 0.740–0.750, whereas,

Kerosene, or illuminating carbon oil distils at 150°–250° C., and has a spec. grav. of 0.800–0.810. It is the presence of the above volatile hydrocarbons which renders some brands of kerosene explosive, and consequently so dangerous.

Elixir of Wahoo.—

Fluid ext. of wahoo (Euonymus)	fl. ℥ ij.
Compound elixir of taraxacum	fl. ℥ viij.

The last-named ingredient may be prepared by mixing:

Fluid extract of taraxacum	fl. ℥ v.
" " " wild cherry	fl. ℥ iij.
" " " gentian,	
" " " licorice root	āā fl. ℥ i.
Elixir of orange	fl. ℥ xc.

Cement for Alabaster.—

Portland cement	12 parts.
Slaked lime	6 "
Fine sand	6 "
Infusorial earth	1 part.
Silicate of soda	q. s.

Make a thick paste. No heat is required. It sets in twenty-four hours.

Alcoholene, according to Mr. H. M. Wilder, is nothing else than purified methylic alcohol. At least, if you take ordinary wood alcohol, and treat it with chromic acid in the nascent state, such as is produced by means of bichromate of potash and concentrated sulphuric acid, you obtain, on redistilling, a product very similar in taste and odor to alcoholene.

"DRUGGIST'S CIRCULAR."

Morphia and Cinnamic Acid.—

Syrup of Tolu,	
" ipecac,	
" squill, of each	4 ounces.
Acetate of morphia	3 grains.

When these are mixed and the morphia is dissolved, a clear solution is obtained. But after several days the mixture becomes turbid and flaky. The question arises

whether the incompatibility is not due to the formation of cinnamate of morphia (formed with the cinnamic acid in the balsam of tolu), and its possible lesser solubility in the menstruum.

Soot Stains on Marble.—For removing the stains caused by drippings from stove-pipes, it is suggested to apply powdered French chalk thoroughly moistened with benzin. Keep it closely covered to prevent evaporation, and after five or six hours apply another similar layer, and so on until the stain disappears. Chloroform may be used in place of benzin, if the latter does not serve.

Vinegar Color for dilute acetic acid. *Caramel* is recommended. [The peculiar flavor, characteristic of vinegar, will not, however, be imparted by this agent.—ED. N. R.]

Artificial Essence of Maple.—If it is desired to imitate the flavor of maple sugar or syrup, guaiacum wood is suggested. For this purpose a watery extract may be exhausted by strong alcohol, or the tincture may be deprived of its resin by the addition of water.

Dispensing Difficulty.—An emulsion is desired of the following:

Oil of erigeron	4 drachms.
Fluid extract of cannabis indica.	3 "
Powdered acacia.	6 "
White sugar	4 "
Cinnamon water	q. s. to make 4 ounces.

Place in a dry mortar the gum arabic and the sugar; pour upon them the oil of erigeron, mix well, and add all at once twelve or fourteen drachms of cinnamon water. Turn the pestle rapidly for about five minutes, or until the emulsion is complete, and "crackles" under the pestle. Then add, first, three or four drachms more of cinnamon water to thin the emulsion a little, and then the cannabis indica by small portions. Finally complete the measure directed, with a sufficiency of the aromatic water, gradually added. The result ought to be a smooth homogeneous emulsion.

To Render Wood Grease-Proof.—To treat a turned-wood box so as to enable it to hold ointments, vaseline for instance, without the fatty substance "striking through," it is advised to apply several coats of shellac dissolved in alcohol. Gelatin or glue is inadmissible, because ointments often contain water or moisture, while most varnishes, and probably all resins except shellac, will be softened by fatty substances and paraffinoids.

[As a matter of economy, shellac may be dissolved in water with the aid of borax. As for the use of gelatin or glue, it will be found that by the addition of a small amount of bichromate of potassium to a solution of glue, and keeping it from sunlight, until it has been applied to the box, and then subjecting it to the action of sunlight, the glue will be rendered insoluble in water, no matter how long they are in contact. We have a paste-board box thus treated inside, which has held mercurial ointment for more than two years, and which still shows no trace of grease on its outer surface.—ED. N. R.]

Abstracts from Fluid Extracts.—Failure to evaporate fluid extracts to dryness in the preparation of abstracts, may be due to the presence of *glycerin* in the menstruum.

Judkins' Ointment.—

Linseed oil	1 pound.
Red lead	4 ounces.
Oil of turpentine	½ drachm.
Sugar of lead	1 "

The oil is first boiled in an earthen pot, after which the red lead is gradually added, and finally the other ingredients.

Another formula is as follows:

Linseed oil	1 pound.
Olive oil	1 ounce.
Red lead	4 ounces.
Borax	½ ounce.
Acetate of lead	1½ ounces.
Oil of turpentine	1 drachm.

Boil the first two oils together, on a coal fire, for four hours; then remove them, and add, with stirring, the red lead, acetate of lead, and borax. When the mass has cooled to blood-heat, add the turpentine.

Iodoform	30 grains.
Salicylic acid	2 drachms.
Mucilage of acacia	2 ounces.
Water	q. s, to make 4 "

Mix. For a gargle.

A clear solution is out of the question, but a tolerable mixture may be made by rubbing the iodoform and the acid together in a mortar until a very fine powder is obtained. Then add the mucilage in very small portions, mixing thoroughly after each addition. Finally complete the measure with water. On standing some time, the iodoform falls to the bottom, and the acid rises to the top; but shaking will again unite the ingredients sufficiently to permit of their use as a gargle.

Fehling's Solution.—This test used for grape-sugar, or the saccharine substance contained in diabetic urine, may be made as follows:

Crystallized sulphate of copper.	40 grains.
Caustic soda	130 "
Neutral tartrate of potassium	160 "
[Or Rochelle salt.....ED. N. R.	140 "]
Distilled water	q. s.

Dissolve the sulphate of copper in one hundred and sixty grams of the distilled water. The other chemicals are dissolved in another portion of the water, and the two solutions are then mixed. Filter, and then add enough distilled water to make the whole measure one liter (or one thousand cubic centimeters. [This solution will not keep for a long time, the copper becoming reduced spontaneously, and in delicate analysis it should be made fresh.—ED. N. R.]

Tincture of Tolu in Mixtures.—A clear mixture is not possible with watery or weak alcoholic mixtures. The best that can be done in such a case is to add the tincture last, when all the other ingredients have been combined.

Camphorated tincture of opium	24 drops.
Syrup of ipecac,	
" wild cherry,	
" squill,	
" tolu,	
Castor oil,	
Oil of sweet almond, of each	2 ounces.
Almond mixture	1½ "

Mix. One tablespoonful every three hours.

A sightly mixture cannot be made, and in case no modification of its ingredients is authorized, it remains only to "shake the bottle vigorously."

CRITICISMS OF THE PHARMACOPŒIA.

Powders for Percolation.—"It is not probable that a majority of the pharmacists who attempt to produce their own preparations ever succeed in attaining the degree of fineness directed by the Pharmacopœia for the process of percolation. An experience of many years with various mills adapted for a small laboratory convinces us of the impracticability, not do say impossibility, in many cases, of reducing roots and barks to such a state of division as to pass through sieves having 80 or 60 meshes to the linear inch, desirable as this may be. And even if a portion of the drug be actually ground to fine powder in a hand-mill, a large proportion will resist comminution." "The only alternative, if one declines to purchase the ground drugs, it carefully to dry the drug at about 120° F. in a suitable oven (the baking oven sold with all the oil stoves at present is exceedingly useful for the purpose), and then to endeavor to procure two or three grades of powder, as the case may be. These are to be moistened separately, and packed in the percolator in layers, with the finest as the bottoms ending with the coarse, woody fibrous matter on top."—*The Druggist*, March, 1883.

Collodion.—P. 83.—First line of process, tarred should read tared.—*Ibid.*

Syrups of Althæa and Almond.—"The introduction of the latter is of very doubtful utility, but since both are very much given to decomposition, it is advisable to introduce 5 per cent of deodorized alcohol, whereby fermentation will be effectually warded off, while to the alcohol there can exist not the slightest objection. The injunction of the Pharmacopœia to prepare the syrup of althæa only as called for, will rarely be followed, as very few druggists will attempt to manufacture half an ounce of the article each time it is prescribed and the patient waiting."—*Ibid.*

To Expedite the Preparation of some of the Medicated Waters of the New Pharmacopœia.—E. V. ZOELLER, PH.G., of Tarboro', N. C., says: The preparation of those waters in which the formulas direct the addition of essential oil, or, in case of camphor water, a solution of camphor, to cotton and picking apart with the fingers until the liquid is evenly disseminated throughout, will be found to be a very slow and tedious process, especially if these waters are made in more than ordinary quantities.

To perform this operation in a short space of time, and more effectually, I find an excellent implement to be the common hand cotton or wool card, the implement that was used in combing cotton or wool preparatory for use upon the spinning-wheel, as a step in making our homespun wearing apparel in those days when, from force of circumstances, we were debarred from enjoying the advantages of those products that are now produced by elaborate machinery.

The implement is made of bent wire, usually iron card-teeth, inserted on leather, fastened upon wood, and is about four by ten inches square. Two or a pair of such are required. The method of using suggests itself upon sight, though some degree of dexterity is necessary, which is, however, quickly acquired by a little practice.

The liquid is simply poured upon the cotton as instructed, and applied to the card, when, with a few minutes' combing or carding, the object is attained which would usually require some twenty or thirty minutes.

Infringement on a Patent.

DR. ALBERT MERRELL, of 2346 Chestnut street, St. Louis, Mo., writes us that the apparatus for "Maceration and Displacement in Vacuo," illustrated and described on page 355 of our last volume, is essentially an infringement on patent No. 104,181, granted him on the 14th of June, 1870. Dr. Merrell says that the apparatus was used by himself as long ago as 1868; that in 1868 and '69 he had it protected by caveat, and that the patent which was granted in the following year he still holds, and will protect against all infringements.

Prof. H. W. Wiley, of the Purdue University, Lafayette, Ind., has been appointed Chief Chemist of the Department of Agriculture. Prof. Wiley is a native of Indiana and a graduate of Harvard.

Pharmaceutical Night Service.—The Municipal Council of Paris has voted a sum of 3,000f. for the year to organize a pharmaceutical night service for Paris on a basis similar to the present night service of physicians and midwives.

Exhibition in Calcutta.—An exhibition will be opened in Calcutta in December next, to which all products of pharmacy and chemistry will be admissible.

The Faith-Cure.—"Have you ever tried the faith-cure?" asked a long-haired, sallow-faced stranger, addressing a gentleman who sat behind him in a street-car. "I have," was the answer. "Do you believe in it?" "I do." "May I ask, then, of what you were cured?" "Certainly. I was cured of my faith!"—*Bost. Med. and Surg. Journ.*

ITEMS.

New York State Pharmaceutical Association.—The fifth annual meeting of the New York State Pharmaceutical Association will convene in Ithaca on the twelfth day of June. The Secretary's official notice will be mailed to all members on the fifteenth day of May. Blank applications for membership can be obtained from the Secretary, Mr. Clay W. Holmes, Elmira, N. Y.

Massachusetts State Pharmaceutical Association.—On Wednesday and Thursday, May 16th and 17th, this Association will hold, in connection with its annual meeting, at Springfield, an exhibition of chemicals, pharmaceutical products and appliances, and other objects of professional interest. Applications for space must be made to William P. Draper, the Local Secretary, who will also receive all goods marked "State Pharmaceutical Exhibition." Intending exhibitors should state whether they will require show-cases to be provided, and whether cases will require stands. All exhibits should reach Springfield five days in advance of the exhibition, and goods *must* be in position before the opening day. Patent, secret, and copyrighted articles are excluded.

Pennsylvania Pharmaceutical Association.—The sixth annual meeting of this Association will be held in the city of Harrisburg, on Tuesday and Wednesday, June 19th and 20th, 1883. The attendance promises to be a very large one. A suitable room will be secured for the exhibition of chemicals, pharmaceutical preparations and apparatus, and manufacturers and dealers are invited to embrace this opportunity of bringing their goods to the notice of the druggists of Pennsylvania. Applications for space, stating the amount required, should be made as early as possible to J. H. Boher, Assistant Secretary, Harrisburg, Pa. No proprietary medicines will be received.

Ohio State Pharmaceutical Association.—The fifth annual meeting of the Ohio State Pharmaceutical Association will be held at Cleveland, Ohio, in Case Hall, Wednesday and Thursday, May 16th and 17th, 1883.

This meeting is expected to be the largest and most interesting held since the Society has been organized.

The exhibition will surpass all previous ones, and all communications in regard to it should be addressed to E. A. Schellentrager, Local Secretary. Reduced rates have been obtained on all the railroads running into the city.

For further particulars address Lewis C. Hopp, Permanent Secretary, 449 Euclid avenue, Cleveland, Ohio.

Virginia State Pharmaceutical Association.—The second annual meeting of this Association will be held in Norfolk, Va., on the 15th of May, continuing until the 18th. The Local Secretary, Mr. F. H. Masi, invites manufacturers and others to exhibit at the meeting crude drugs, chemicals, pharmaceutical preparations, etc., secret and proprietary articles excepted. Applications for space should be made to Mr. Masi, who will also receive consignments for the exhibition.

Kentucky Pharmaceutical Association.—The regular annual meeting of this Association will be held at Lexington, Tuesday, May 15th, at 3 P.M., and continue 16th and 17th.

Owing to the removal of Mr. E. S. Porter from Eminence, the Executive Committee changed their place of meeting to Lexington.

The races take place during our meeting, and members wishing to attend can secure rooms by addressing the Local Secretary, Mr. T. B. Wood, of Lexington, Ky.

The new law will come up for discussion; it is very important, therefore, that there should be a large attendance. Let each member resolve to bring at least one new member.

Hamilton County (Indiana) Pharmaceutical Association.—We are indebted to Mr. Lucius Lybrand, of Noblesville, Ind., for the information that at a meeting

of the Hamilton Co. (Ind.) Pharmaceutical Association, held in Noblesville on the 7th of March, it was voted unanimously to approve the recommendations of the Committee of Trade Interests of the Massachusetts Pharmaceutical Association respecting rebate or contract sales. It was also decided that delegates would be sent to the meeting of the National Retail Druggists Association, to be held on the 10th of September next, in Washington, D. C.

West Virginia Pharmaceutical Association.—The third annual meeting of this Association will be held in Charleston, W.Va., on Tuesday, June 12th, 1883. Those who wish to become members should address Mr. R. A. McCabe, Wheeling, W. Va., Chairman of the Executive Committee. Those who wish to present papers should address the President, E. L. Boggs, at Charleston; C. Menkemiller, Secretary, Wheeling, W. Va.

Indiana Pharmaceutical Association.—Mr. John A. Lambert, corner of New York and Noble streets, Indianapolis, is the Local Secretary for the annual meeting, which will commence on Tuesday, May 22d.

Albany College of Pharmacy.—At the second commencement of this school, which took place on the 27th of February, the degree of Graduate in Pharmacy was conferred upon the following-named persons: Lyle E. Ackerman, George Boucher, Thaddeus N. Benjamin, Theodore J. Lewi, John C. Roth, Louis Sautter, Jr., Sarah E. Simonet, Frank J. Smith, Leonard H. Wheeler, Theodore C. Yauman.

Maryland College of Pharmacy.—At the thirty-first commencement of this College, which took place on the 16th of March, the degree of Ph.G. was conferred upon the following-named graduates: E. H. Atkinson, A. Parran Betts, Louis Baist, Guy H. Boyd, Henry Becker, Joseph Blum, Luther B. Benton, Alston H. Bickers, Wm. L. Campbell, Martin A. Daily, W. F. Dailey, Chas. H. H. Elliot, Wm. C. Fink, Manes E. Fuld, S. M. Gable, Thos. D. Hursey, William Krauss, J. Beauregard Kelley, Emile Lautenbach, Wm. F. Markurt, Henry Maisch, Chas. D. Remsburg, Noble C. Rolph, W. A. Sites, A. Edwin Schmidt, G. E. M. Smith, Geo. A. Thompson, A. M. Tumbleson, J. J. Valentini, Chas. H. Wissler, J. Wesley White.

The prizes to the graduating class were awarded as follows: *First*, W. Krauss; *second*, A. E. Schmidt; *third*, J. J. Valentini.

The prizes to the junior class were taken by the following-named students: R. M. Glacken and J. J. Valentini.

Junior class students entitled to honorable mention: R. M. Glacken, Louis Bellerman, W. F. Sulzbacher, A. J. Lacier, C. P. Straus, F. W. Sultan.

Louisville College of Pharmacy.—At the annual meeting held on the 12th of March, the following were elected: *President*, Dr. Wiley Rogers; *Vice-Presidents*, Prof. Emil Scheffer and J. W. Fowler; *Recording Secretary*, Fred. C. Meiller; *Corresponding Secretary*, Otto C. Mueller; *Treasurer*, C. Tafel; *Curator*, O. A. Beckmann; *Directors*, Prof. Emil Scheffer, Dr. Wiley Rogers, Prof. E. Lewis Diehl, Fred. C. Meiller, C. Tafel, Jno. Colgan, J. W. Fowler, R. J. Snyder, Prof. Ed. Goeble, Jac. Hexner, O. A. Beckmann, and Otto E. Mueller.

Professors. Emeritus of Materia Medica and Botany, Emil Scheffer, Sr.; *Theory and Practice of Pharmacy*, C. Lewis Diehl, Ph.G.; *Chemistry*, L. D. Kastrubine, A.M., M.D.; *Materia Medica and Botany*, Edward Goebel, Ph.G. The school committee is considering the advisability of changing the time for instructing from the evening to the afternoon, and of making attendance in the practical courses compulsory.

The first public commencement of the Louisville College of Pharmacy was held at the Louisville Opera House, Friday evening, March 9th, 1883.

The degree of "Ph.G." was conferred on the following gentlemen: R. A. Anderson, of Paris, Tenn.; Phil. Fischer, Louisville; Robt. Frick, Louisville; R. J. Fuqua, Eminence, Ky.; Fred. Hoefer, Louisville; Fred. Johanboche, Louisville; Will Kerr, Louisville; Walt. B. King, Waco, Texas; Chas. Millheisler, New Albany, Ind.; L. C. Owings, Jeffersontown, Ky.; Henry A. Pfafflin, Indianapolis, Ind.; Henry J. Rueb, Lafayette, Ind.; Jos. Waldauer, Greenville, Miss.; John Wolpert, Louisville. A certificate of proficiency was awarded to John D. Cooper, of Louisville. The honors of the class were divided between Walter B. King, of Texas, and Henry A. Pfafflin, of Indianapolis, Ind. Mr. King received the annual alumni gold medal for highest general average in all branches, and a gold medal for best examination in pharmacy. Mr. Henry Pfafflin received the college gold medal for the best original thesis, and a copy of National Dispensatory for second best general average in all branches; then a new pharmacopœia for best examination in the practical course, a new dispensatory for best examination in materia medica, and a copy of Gray's Manual for best examination in botany.

Twelve juniors passed a successful examination into the senior class, of whom James Dillworth received the alumni prize, a copy of Flückiger and Hanbury's Pharmacographia, and Jacob Lichten an Attfield's Chemistry for best examination in chemistry.

St. Louis College of Pharmacy.—The seventeenth annual commencement exercises of the St. Louis College of Pharmacy took place at Liederkranz Hall, Wednesday evening, March 14th, 1883, and the degree of Ph.G. was conferred upon the following gentlemen:

Arthur C. Bang, Edward H. Barnickol, Wm. M. Benz, Henry J. Bergmann, Charles C. Borchers, Henry Brookes, Wm. F. Carter, Henry C. Duering, Wm. S. Duncan, John A. W. Fernow, Marshall Finch, Edw. H. Frielingsdorf, Jacob Friesz, Wm. H. Gallenkamp, Chas. C. Giesick, George B. Haase, Gust. A. Hartnagel, Anton P. Hess, Frank S. Jüngling, Charles H. Koeneke, Hugo W. Kohler, Jean B. Knopf, Wm. H. Lancey, Augustus Leonhart, George A. Luecking, Fred. A. Moses, Fred. J. Motz, Rudolph A. Raible, Thos. L. Reber, Chas. F. Ruesch, Oscar J. Reuss, Oscar Ruff, Herman Saxenmeyer, Wm. C. Schott, Edward B. Schuh, R. N. Schweikhardt, Ferd. C. Sennewald, Herman G. Smith, G. Wm. Steininger, Henry G. Tubbesing, Albert F. Wellmeyer, Henry M. Whelpley.

The following gentlemen of the senior class received honorable mention: Wm. S. Duncan, Chas. C. Borchers, Henry J. Bergmann, A. P. Hess, Oscar Ruff, Augustus Leonhart, R. A. Raible, Chas. F. Ruesch, W. C. Schott, and Geo. A. Luecking. The following of the junior class received honorable mention: F. W. Schumacher, Henry Muetze, R. H. Smiley, Otis W. Smith, J. C. Falk, Francis Zerr, Adolph Hoenny, and Joseph A. Temm.

Certificates of proficiency in chemistry were presented to Rudolph Hanser and J. G. Lumelius. The valedictory on the part of the Faculty was delivered by Prof. C. M. Woodward, of Washington University. Mr. Henry S. Brooks followed with well-chosen words on the part of the graduating class.

The alumni medal was delivered to Mr. Henry M. Whelpley, he having obtained the highest average in all branches.

The Alumni Association of the St. Louis College of Pharmacy held its annual meeting at the college rooms, February 21st, at which the following officers were then elected for the ensuing year: *President*, J. W. Tomfohrde; *Vice-Presidents*, E. R. Martin and Theo. Klipstein; *Rec. Secretary*, Theo. E. Loehr; *Cor. Secretary*, Theo. A. Buckland, Jr.; *Treasurer*, Chas. Gietner; *Ex. Board* (three years), O. F. Heitmeyer and J. P. Schwenthaler.

THEO. C. LOEHR, *Cor. Sec.*

A Hint Respecting the Use of Iodoform.—*The Western Medical Reporter* suggests that patients who are obliged to use iodoform ointment for venereal ulcerations should be instructed to spread some of the ointment on muslin, and bandage a finger with it. This apparent need for its use will serve to disguise the source of the odor from that employed elsewhere.

Pharmacists as Public Analysts.

(Continued from page 129.)

There seems to be, then, a necessity for supplying this want of the mass of the people, and as the most natural solution of the question, it will at once occur to the reader that this is a field upon which the *pharmacist* of the future will be able to gain much distinction. The peculiar training which he undergoes, to properly fit him for his profession—and we have at present only those in view who lay a good foundation for their career—and which compels him to familiarize himself, among other things, with practical analytical chemistry, particularly so far as to fit him for the intelligent examination of the drugs he deals in; this same training will also enable him to become the proper umpire in questions affecting domestic hygiene, the purity of articles of food or general consumption, etc., among his constituents, that is, his neighborhood or regular customers.

The questions which may thus be submitted to the pharmacist are manifold. One customer may desire to have an opinion on the quality of sugar he is about to purchase for family use, another may consult him regarding the quality of flour, or vinegar, or laundry-soap; another desires information about some particular baking powder, on the presence or absence of metallic poisons in pickles or in the enamel of cooking utensils; another wants his drinking water examined, or wishes to know what is the quality of the cream and milk which is being delivered to him. A number of other cases will at once suggest themselves, in which the ready accessibility of an analyst will be of great advantage to the public.

We are aware that some pharmacists occasionally oblige special friends and patrons by furnishing such information; but there is no way for the public at large to derive any benefit from their knowledge. We are convinced that it would redound to the personal advantage of every *competent* pharmacist, if he were to announce his readiness to undertake such domestic analytical work. The monotony and drudgery of his shop or store-duties would thereby become, at times, agreeably interrupted by a more congenial occupation, his relations to his customers would become more familiar and confidential, and his reputation as a source of general scientific information would become firmly established.

The charges for such work might be quite moderate and yet pay well for the time spent upon the examinations. Nor need he fear to incur the displeasure of the tradesmen of his neighborhood, for he would most likely establish some suitable rules for the guidance of his customers which would prevent him from being looked upon as a defamer or from being involved in litigation. The principal rules might be these two: 1. That he shall remain in ignorance as to whence the samples submitted to him are obtained; 2. That he furnishes the analysis only for the personal and private use of the applicant.

The field thus open for the pharmacist of the future makes it incumbent upon pharmaceutical schools to provide the necessary instruction, in practical analysis, for their classes. Much has already been accomplished in this direction, but much more remains to be done. There is a healthy spirit of rivaly among the different schools, each trying to perfect its system and means of teaching as much as possible. It is to be hoped that the outcome of this emulation will be a race of pharmacists competent to execute the plan foreshadowed above.

The Essence Manufacture of Messina.—According to the *Chem. Ztg.*, the exportation of essences from Messina reaches in value from 5,500,000 lire to 6,000,000 lire annually. The quantity of these essences are about 150,000 kilos. of lemon, 60,000 kilos. of bergamot, and 30,000 kilos. of orange. For the preparation of each kilo of essence about 3,500 fruits are required, and it is stated that some 200,000,000 lemons come annually to Messina for the manufacture of essence. These would only yield 57,128 kilos., or about one-third the quantity actually exported. The rest is probably made up by substitution, turpentine serving for a good deal. The finest qualities are taken by France and Germany, England and America [?] buying chiefly the lower qualities.—*Chem. and Drugg.*

Berlin Physicians and Homœopathy.—Berlin physicians having last year petitioned Prince Bismarck to prohibit the dispensing of medicines by homœopathic physicians, it is now reported that the Prince has refused to do so.

Penwiper.—A writer in a German paper states that it is the custom in offices in that country to have a sliced potato on the desk for use as a penwiper, and to clean steel pens. It removes all ink-crusts, and gives a peculiar smooth flow to the ink. New pens should be passed two or three times through the gas flame to remove the grease with which they are coated before packing. The ink will then flow freely.

Fothergill's Cough Mixture having been tried in the Episcopal Hospital, Philadelphia, has failed to afford the favorable results claimed by its author. Its composition is:

Hydrobromic acid	gtt. xx.
Extract of squill	gr. ss.
Spirit of chloroform	ʒ ss.

to be repeated every three hours.

PHARM. CALENDAR FOR MAY.

N. B.—The officers of Societies, Colleges of Pharmacy, Pharm. Associations, etc., will oblige us by forwarding schedules of their meetings, lists of officers, and any changes that may be desirable.

Date.	Society Meetings.
Tues. 1st.	Iowa Pharm. Ass.—Ann. Meets at Davenport.
	St. Joseph (Missouri) Pharm. Assoc.—Meet.
Wed. 2d.	Maryland (State) Pharmaceutical Ass.—Preliminary Meet. at Baltimore.
Thurs. 3d.	Louisville Coll. Pharm.—Pharm. Meet.
Friday 4th.	Cleveland Pharm. Ass.—Annual Meet.
	American Chem. Soc.—Meets at New York.
Mon. 7th.	Erie Co. Pharm. Asso.—Meets at Buffalo.
	National Coll. Pharm., Washington, D. C.
Tues. 8th.	Alabama Pharm. Ass.—Ann. Meet. at Selma.
	Massachusetts Coll. Pharmacy.—Pharm. M.
	Kings Co. Pharm. Soc.—Meets in Brooklyn.
	National Coll. Pharm.
	Texas State Pharm. Ass.—Annual Meet. at Austin.
Wed. 9th.	New York Board of Pharmacy.—Meeting at Coll. of Pharm. building.
Thurs. 10th.	Virginia Pharm. Ass.—Ann. Meet. at Norfolk.
	Newark Pharm. Assoc.
	Philadelphia Coll. Pharm.—Alumni and Pharm. Meeting.
	Maryland Coll. Pharm.
	New York German Apoth. Soc.
	Lancaster Co. Pharm. Assoc.
Tues. 15th.	St. Louis College Pharm.—Trust. and Al. Meet.
	Philadelphia Coll. Pharm.—Pharm. Meeting.
	St. Joseph (Missouri) Pharm. Assoc.
	Kentucky Pharm. Asso.—Annual Meeting, at Lexington.
Wed. 16th.	Ohio State Pharm. Ass.—Annual Meeting, at Cleveland.
	New Jersey Pharm. Ass.—Annual Meeting, at Orange.
	Massachusetts Pharm. Assoc.—Annual Meet. at Springfield.
Tues. 22d.	Boston Druggists' Assoc.
	Indiana Pharm. Assoc. at Indianapolis.

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ABRUS PRECATORIUS, *Linn.*